



## The Gold Inlay.\*

J. V. CONZETT

Adopting the system of Dr. Black, we will divide the cavities into five classes:

First—Cavities beginning in structural defects in the teeth, pits and fissures.

Second—Cavities in the proximal surfaces of the bicuspid and molars.

Third—Cavities in the proximal surfaces of the incisors and cuspids, which do not involve the removal and restoration of the incisal angle.

Fourth—Cavities in the proximal surfaces of the incisors and cuspids that do require the removal and restoration of the incisal angle.

Fifth—Cavities in the gingival third (not pit cavities) of the labial, buccal or lingual surfaces of the teeth. (Black.)

### **Cavities in Occlusal Surfaces.**

Cavities occurring in the occlusal surfaces of the molars and bicuspid do so as a result of imperfect closure of the enamel plates. These cavities occur in a portion of the tooth that would naturally be immune to decay, by reason of the fact that the friction of the food in the act of mastication keeps these portions of the tooth clean, and

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effectually prevents the formation of the gelatinous plaques of Williams. In spite of that fact, these are about the first places wherein we find decay in the child, as he presents himself to us for examination. The faults in the closure of the enamel plates leave small openings through the enamel into the dentin, and the organisms of decay find ready access, where they are protected from the force of masticatory stress by the overhanging enamel walls and, undisturbed, begin their work of destruction. It is very important to discover these beginnings of decay early, as in many cases the decay progresses very rapidly, and before the patient is aware of any trouble the entire dentin may become carious, and the life of the pulp be endangered. This in a young child is a most serious condition, for it very frequently happens that the pulp is involved before the completion of the development of the roots. If at such a time the pulp, the formative organ of the tooth, be destroyed, all further development ceases, and we have a tooth with imperfectly developed roots, wide open foramina, and root ends that are rough, all of which make a condition that is very difficult, indeed, to remedy. The moral is to carefully search out these fissures in the teeth of our little patients, and as soon as discovered, to cut them out and fill. Gold foil is contraindicated in the large majority of our little patients, by reason of the stress incident to its manipulation, and in the past the large majority of these cavities were filled with amalgam, and then later in the life of the patient the amalgam was removed and gold inserted. The inlay is a great boon in the filling of these cavities; a boon to both patient and operator. If the cavities are discovered before extensive decay has taken place the extension need not be great, for as the territory of their situation is only vulnerable by reason of the imperfection of the enamel plates, the extension necessary is only enough to bring the margins into smooth territory.

### **Preparation of Cavity.**

The first procedure is to open the cavity and obtain the outline form. This should include all of the fissures to their entire extent. If a fissure is not cut out to the end, we invite a recurrence of caries by reason of the fact that the organisms of decay can again obtain an entrance to the tooth through the remaining portion of the fissure that was not filled, and the filling will need to be remade. As all of the area on the occlusal surfaces of the teeth is in naturally immune territory, it is not necessary to extend for prevention further than to cut the fissures as far as they exist, and lay the margin of the filling in smooth territory.

If there is any great extent of decay, the enamel walls can best be broken down with a chisel, either with hand pressure or with mallet force.

Great care should be exercised in the opening of cavities of this class in which there is evidence of extensive decay, as sometimes the abrupt entrance of the chisel through the non-resisting mass of decay will penetrate the pulp chamber, causing severe and needless pain. The enamel should be broken down as far as it is undermined, with the chisel, and then the decay removed with a sharp spoon excavator. The spoon excavator should be as large as the cavity will permit, and like all instruments used in operating on the teeth, should be exquisitely sharp.

The decay having been removed the fissures are cut out to their extent with a fissure bur of the right size. The cross-cut enamel burs are very useful in this place, and if used with a rapidly revolving engine and a sharp bur, coupled with a light touch, the cavity ought to be extended with very little pain. In using a bur in a rapidly revolving engine, such as the electric engine, great care should be exercised not to leave the bur in contact with the tissues for so long a time as to generate heat, for the pain that is caused by the heat of a rapidly revolving bur is intolerable, and in my opinion is the most frequent cause of pain in dental operations. Not only is the generation of heat painful, but it is positively harmful to the tooth, inasmuch as the continued heat causes a hyperemia of the pulp that frequently persists for so long a time that the tooth is very sensitive to the thermal changes, and sometimes progresses so far that the death of the pulp ensues. A sharp bur, rapidly and intelligently used, is about the best obtundant that we have, but a rapidly revolving bur used without judgment is the cause of more suffering and the loss of more pulps than anything with which I am acquainted.

**Preparation of  
Floor and Side  
Walls.**

After carrying the cavity outline to the end of the fissures, the enamel walls can be broken down to the region of the cavity outline. Then with an inverted cone bur of the size of 37 or 39, the pulpal wall or floor of the cavity can be made perfectly flat.

Remember that the ideal is flat seats and parallel walls, or walls as nearly so as it is possible to make them.

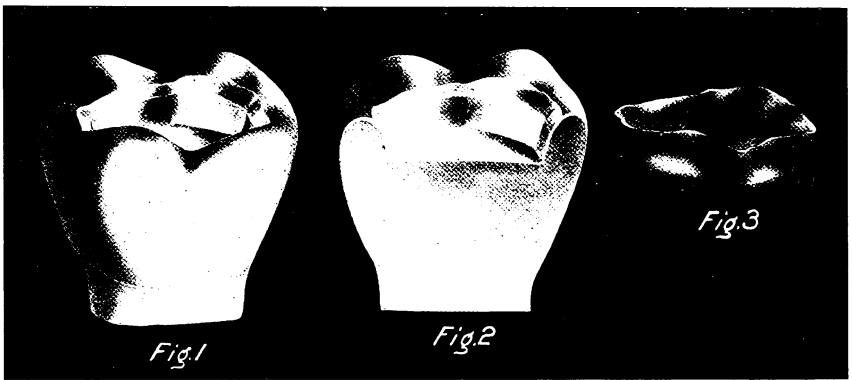
When the seat has been made flat, the walls of the cavity should be cut as nearly at right angles to the floor of the cavity as it is possible to cut them. This is best accomplished with a fissure bur, or an inlay bur, such as has been illustrated. The dentinal walls with this instrument should be cut as nearly at right angles to the pulpal wall as possible. If there is any deviation from the rectangular, it must be in the direction of a slope out of the cavity, for in any other event the wax model would not draw, would become distorted, and the resulting inlay would be a failure. But too great a departure from the straight wall will be at the expense of the retention of the inlay.

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### Retention Shape.

In the preparation of any cavity for an inlay we must obtain as much mechanical retention as possible, for the adhesive properties of the cement are not sufficient to depend upon for retention in case there is not sufficient supplementary mechanical retention.

Dr. Black has demonstrated that a filling can be malleted into a box-like cavity with no undercuts, and be perfectly secure; this is because of the elasticity of the dentin, which gives a little under the force of the mallet, and then when the filling is completely malleted to place, the natural elasticity of the dentin hugs the gold, and it is firmly locked to place.



Dr. Poundstone has demonstrated the fact that cement cannot be forced into a smaller space than about  $1/1,000$  of an inch; consequently, in an inlay that is perfectly adapted to a cavity, as we have in a well-made Taggart inlay, we have between it and the dentin a body of the cement which is incompressible beyond a certain point, yet under the mallet the inlay goes to place, and there is no visible cement line. What happens? I think that the same phenomenon that Dr. Black records in the case of the malleted filling, *i.e.*, the elastic properties of the dentin comes into play, and gives under the stress of the malleting in of the inlay, and then upon the completion of the inlay the natural elasticity hugs the inlay, just as it does the filling. In that way in a cavity with flat seat and parallel walls we have the "hug" of the dentin added to the other means of retention. On the contrary, if the cavity is formed with walls that slope too much occlusally the force of the dentin hug will have a tendency to push the inlay out of the cavity, and in a short time the inlay will seem to have grown, and the margins will protrude out above the cavity.



Fig. 1 shows a cavity prepared in the occlusal surface of a lower second molar; the flat seat and the parallel walls will be noticed. It also shows the cavo-surface angle preparation, which is beveled with a long bevel, which takes in the whole thickness of the enamel. This is also shown in the sectional view of the same cavity, Fig. 2. The cavo-surface angle and its treatment is the most important part of cavity preparation in the making of an inlay or a filling, for the cavity may be perfect in its preparation in every other particular, but if the cavo-surface angle is imperfect the filling or inlay is imperfect at its most vulnerable point, and sooner or later there will be a recurrence of decay at this point. In all fissures the enamel rods dip toward the fissure, so that a cavity at this point, if made with straight enamel walls, will be perfectly safe, as the rods that reach the surface are all long rods and reach to the dentin, and consequently are not in danger of displacement through the stress that may be brought to bear upon them. As we depart from the fissures, however, the rods begin to straighten up, and as we approach the cusps the direction of the rods are in the other direction. Therefore the farther we get away from the fissures the greater must be the bevel of the cavo-surface angle to insure success. While the general direction of the rods is perpendicular to the dentin, and to some extent follows the curves of the dentin, there are so many deviations from the normal that the only way to be perfectly sure is to observe the cleavage of the rods under the chisel, and then lay out the bevel of the cavo-surface angle accordingly. In order to show the possibility of drawing and making a model in a cavity of this sort, in Fig. 3 we have a view of the wax model made from the cavity in the molar illustrated. In this model the directions of the dentinal and the enamel walls can be beautifully seen; also the manner in which the gold in following the bevel of the cavo-surface angle will protect the enamel margins by overlapping them.

#### **The Upper Molars.**

In the upper molar we find the central pit and the distal fissure the seat of frequent involvement. If the involvement is not great, each cavity can be treated separately (Fig. 4), and this is the ideal, for if the decay is so great that it undermines the triangular ridge, making it necessary to cut through and restore it, it greatly weakens the tooth, and makes necessary the removal of a large amount of dentin, and the consequent placement of a large mass of filling material, an evil that is always to be avoided whenever possible, for no material is as compatible to the pulp as healthy dentin, and in proportion to the amount of dentin we remove, and filling material that we place, we endanger the life of the pulp.

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In small pits the cavity is entered with a small round bur and the dentin undercut as much as possible with a sweeping motion of the bur, when it is withdrawn and the undermined enamel broken down with a chisel. The bur should always be exquisitely sharp. In this day of cheap burs there is absolutely no excuse for using a dull bur, and the moment that the edge is dulled to the slightest extent it should be discarded and

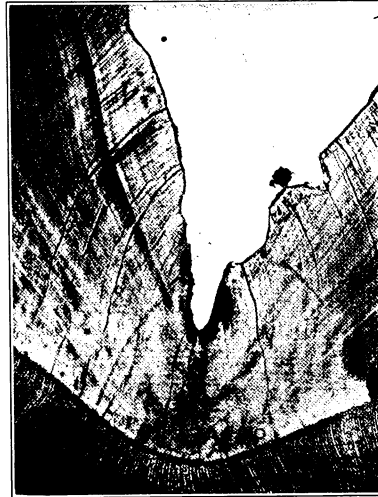
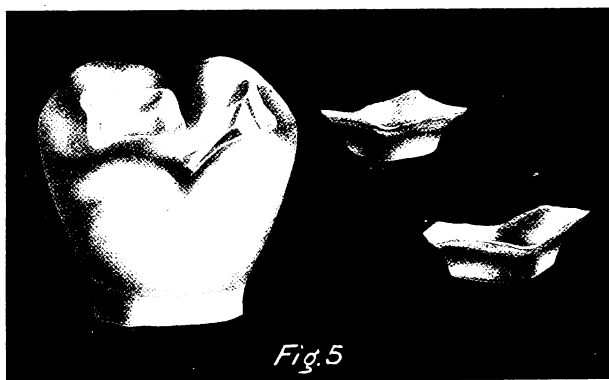


Fig. 4

a new one supplied. I rarely use a bur more than once, especially if I have had occasion to touch the enamel with it, and for that reason I am able to excavate teeth that under any other circumstances would produce pain intolerable. The very best obtundant for sensitive dentin is a sharp bur rapidly revolved, and an operator that is skilled in the use of his instruments.

Next take a number 37 inverted cone bur, and again quickly, but with gentle touch, further undermine the enamel, and again chisel the overhanging part away. This to be repeated until the cavity is sufficiently enlarged. Now with the chisel and hoe the walls of the cavity are paralleled and the seat made as flat as possible. The illustrations show the cavities prepared in plaster models. The preparation of the cavo-surface angle in this position is very simple, as the enamel dips toward the pits and fissures, and as a consequence a cavity that is made with straight walls will, as a rule, have no short rods requiring protection, but in order

to prevent the possibility of leaving on the margin of the cavity, rods that have been so injured by the cutting necessary for cavity preparation, it is well to go all around the cavity with a sharp chisel and smooth the surface of the margin. It is well to make the bevel as long, axially, as possible in this position, for here we expect the greatest possible stress to come upon the filling, and if there is an insufficient amount of gold on the beveled margin to resist the stress, it will flow and leave a leak around the margin. So, if possible, in all occlusal cavities the enamel margin should be so made that the bevel is the thickness of the enamel, and the paralleling of the cavity walls can be obtained in the dentin.



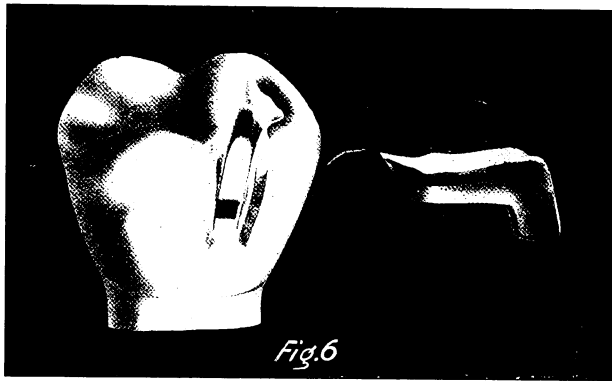
*Fig. 5*

I have heard it advocated to make a long surface bevel for inlay work, that there might be a feather edge of gold that might be burnished down to the surface of the tooth after the completion of the inlay. I believe such a procedure to be very bad practice, especially in any region requiring any resistance to occlusal stress, for the reason stated above, viz., the insufficient body of gold in such margins to resist the stress of mastication without changing shape.

In Fig. 5 we have a reproduction of one of Dr. F. B. Noyes' beautiful micro-photographs of the enamel rods situated on the occlusal surface of a molar, in the region of a pit. We see here the arrangement spoken of in the dipping of the rods toward the pit, and a study of the same will enable the pupil to understand why a straight wall from the seat of the cavity to the surface of the cavity will, by reason of the arrangement of the rods in this situation, leave no short enamel rods. The farther we recede from the pits and fissures, however, the more the rods straighten up until we approach the cusps, when they begin to stand in the opposite

direction, so that the farther away from the pits we lay the margins of our cavities the more careful we must be to see that the bevel of the cavo-surface angle is so placed that all short rods will be eliminated.

The depth of the cavity in this position will depend upon the occlusion to some extent, but it must in any case be deep enough to give sufficient body of gold to resist the tendency to flow, but more particularly to resist the tendency to displacement. The deeper an inlay is anchored the more sure will be its permanency. A cavity must, of course, always be anchored in the dentin and not in the enamel. I said "of course" but I have seen examples of cavity preparation in which the operator did not



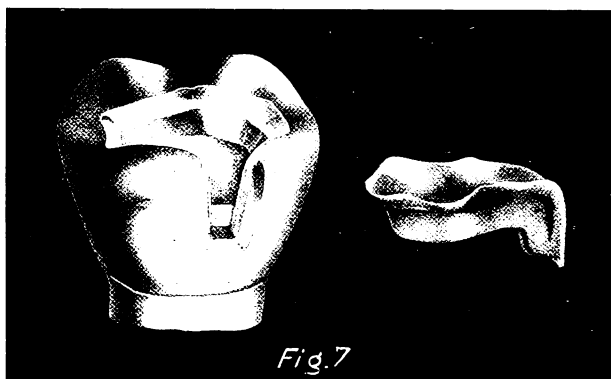
see that the anchoring of the filling in the dentin *was* a matter of course; hence the emphasis on that point.

In cavities in the distal fissures of molars we often find the fissure opens into the disto-lingual fissure, and it is necessary to extend the cavity across the lingual margin into the fissure, making one cavity of the fissures upon the occlusal and the lingual surfaces (Fig. 6). This can often be accomplished by inserting a fissure bur in the fissure in the occlusal surface and cutting lingually until the bur cuts through the tooth and emerges on the lingual side of the tooth through the disto-lingual fissure. This cut can then be enlarged and broadened with chisels and burs until we have a cavity that is of oblong shape with openings upon the occlusal and lingual surfaces as indicated in the accompanying illustrations.

In Fig. 4 is shown a cavity prepared in the central pit of a plaster model of a molar, the model very much enlarged to show more plainly the detail of the preparation. Note the flat seat and the parallel walls, but more particularly the bevel of the cavo-surface angle, showing the

idea of the author of the beveling of the margin at this surface. Note also the fact that while there is a deviation from the perpendicular in the treatment of the cavity margin, which goes clear through the enamel, the walls of the cavity in the dentin are as nearly perpendicular to the floor, or seat of the cavity, as it is possible to make them.

In Fig. 4 we have also the preparation advised for a cavity in the distal fissure that does not involve the disto-lingual fissure, and in Fig. 6 one in which the cavity is extended over and into the disto-lingual fissure. The inlays made for these cavities are figured with them, and plainly show the protection to the enamel rods afforded by the beveling of the margins.



A study of the inlays made to fit the cavities will often give the student a better idea of the cavity preparation than a study of the model with the cavity prepared therein. This is particularly true of the cavo-surface angle preparation, and as I deem the preparation of that surface of the utmost importance, I wish to recommend a careful study of the same. It is necessary to emphasize the importance of this point for the reason that we find so many men who have a very hazy idea of what the preparation of the cavo-surface angle, or the beveling of the margins of the cavity, means. Fewer there are that know the structure of the enamel with sufficient clearness to be able to know the importance of protecting the margins of the enamel that have been weakened by the decay, or the cutting incident to the preparation of the cavity. The intact enamel is almost invulnerable to the hardest instruments, but when its integrity is once broken, it is a very easy matter to continue breaking it by cleaving it along the length of its rods. Indeed, it would not need an instrument to follow the break if the rods standing on end as they do have no pro-

tection. The ordinary force of mastication would continue the destruction. Therefore, the necessity of protecting these margins when we are repairing the ravages of decay with a filling or an inlay is seen to be most imperative.

When the decay has undermined the enamel in the triangular ridge, it becomes necessary to break down the enamel composing it, and make one cavity of the whole occlusal surface. When this is the case we will nearly always find the cavity very deep and closely encroaching upon the pulp. We will also frequently find that there are undercuts from backward decay that will make impossible the removal of the wax. When this is the case, after we remove the decay and thoroughly cleanse the cavity, fill with a good cement and let it thoroughly harden, and then treat as though it were dentin, and form the cavity in the cement. A cavity in this surface will partake very largely of the appearance of a cavity in the occlusal surface of a lower molar. It will more often than not be necessary to carry the cavity over into the disto-lingual fissure, and in the illustration (Fig. 7) the cavity has been formed with such an exigency in mind. We will make the usual box form cavity, with square seat and parallel walls, and bevel the margins all around the surface of the cavity. Particular care must be given to those margins that cross the marginal ridges, for here the enamel rods will need the most careful protection, not only by reason of their direction, but also by reason of the fact that in this position the greatest stress will be brought to bear upon them. Fig. 7 shows the preparation for such a cavity, and the inlay made for the same.

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## **Sugar, A Food. A Reply to Dr. R. Roessler.**

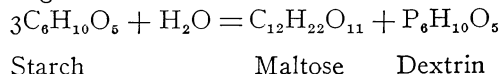
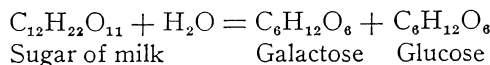
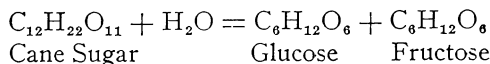
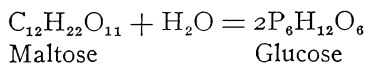
By GEORGE B. HARRIS, B.S., D.D.S., Detroit, Mich.

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In the November issue of *ITEMS OF INTEREST* I find a paper by Dr. Roessler, which he read before the New Jersey State Dental Society, in which he declares sugar to be harmful, not a food, a crystallized acid, etc. I very much disagree with Dr. Roessler. Sugar is a food. It is not an acid and is not harmful in moderation.

Does sugar contain any acid at all? I say that it is not only not an acid, but it does not contain any acid. Cane sugar is a polysaccharide (complex sugar). Now all polysaccharides break down into monosaccharides (simple sugars) very easily. If cane sugar, therefore, contains

an acid, or is "crystallized acid," as Dr. Roessler chooses to call it, when it breaks down we would expect to find simple acids. Since polysaccharides break down into monosaccharides, monosaccharides must be acids or contain them if the polysaccharides do. This, however, does not occur, as these formulas show.



In these formulas we discover no sign of any acid. We are only able to get an acid radical by substituting an acid for the water. I will also show under the physiology of sugar that no acid is produced from the monosaccharides made from the sugar cane by the formulas given above.

The better grades of candy are made from sucrose (cane sugar); the cheaper grades from glucose. Since cane sugar can be changed to glucose by simply adding water, the one would practically be as harmful as the other. If cane sugar therefore contains acid or was acid by the addition of water, we would simply dilute that acid and glucose would be an acid. Glucose, however, is not an acid; therefore sucrose is not. The graphic formula for glucose is,  $\text{CHO}-\text{CHOH}-\text{CHOH}-\text{CHOH}-\text{CHOH}-\text{CH}_2\text{OH}$ .

There is no acid radical present. There is an alcohol, however, in  $\text{CH}_2\text{OH}$ . An alcohol and an acid cannot stand, and since we have the alcohol radical, we cannot, therefore, have the acid, and do not.

Cane sugar is found in sugar cane, sorghum, Java palm, sugar maple, beets, madder root, coffee, walnuts, hazel nuts, sweet and bitter almonds, in flower blossoms, honey, etc. Now if it is not an acid here and if not harmful here, why is it in free concentrated state if used in moderation?

Dr. Roessler forgets that South America, Cuba and other sugar-producing countries lived on sugar cane for centuries, and do to-day. He also forgets that long before sugar cane was known, our ancestors sweetened their coffee with maple sugar, and ate it quite as freely as we do candy to-day.

Again he states that "the manufacture of sugar of commerce shows

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plainly that it is nothing else but concentrated crystallized acid, which is very dangerous to the general welfare." Sugar is not a "crystallized acid," nor does it give an acid reaction.

Sugar in its natural state is not acid and does not contain any acid. If the sugar of commerce contains any acid, acid must be used in its "manufacture." (Sugar is not manufactured, but refined.)

Sugar of commerce is obtained from sugar cane and the sugar beet. The methods of refining it differ only in minor details. Sugar cane is first crushed, then mixed with water. This gives a dark colored liquid. The coloring matter is removed by filtering it through bone black. It is then evaporated partly in the air and continued in vacuum pans. It then goes into centrifugal machines, which are perforated. This holds back the crystallized portions. These are then dried in a warm room and become the white cane sugar we have on our tables, and is the sucrose. The liquid is boiled, strained and makes the glucose and molasses.

The process is purely mechanical. No acid is used. Therefore, how can it be an acid, or contain any? It was a carbo-hydrate to start with, containing no acid. No acid being used in refining it, it cannot contain any. The process being mechanical, it must still be a carbo-hydrate, and since carbo-hydrates are foods, it must also be a food.

Sugar is a concentrated, crystallized, pure carbo-hydrate; a fat-producing, heat-producing food. It is a concentrated food and should be eaten with moderation.

### **Action of the Body on Sugar.**

The saliva starts the digestion of the starches, not acting on succrose, but other carbo-hydrates. In the stomach, sugar is changed to amyto-dextrin. The amyto-dextrins are acted upon by ptyalin-erythrodextrin to achro-dextrin to maltose. In the intestine the ferment maltase changes maltose to dextrose, and in this form it is absorbed, carried to the liver, where it is again transformed into glycogen and given to the blood as the body needs it. All through the breaking up of sugar by the body into its simplest forms, we find no acid, nor is it eliminated by the body as a poison is. It is used by the body to produce heat and fat. Anything used to build up the body is a food; therefore sugar is a food.

Sugar, if left around the teeth and gums, ferments, after being broken down into monosaccharides, and produces, among other substances, lactic acid. Lactic acid is certainly harmful to the enamel, but beyond this, sugar is not any more harmful when eaten, than any other food is when used to excess.

I have shown that sugar is not an acid, nor is there an acid produced from it in the stomach. Again Dr. Roessler refers to the effects of sugar acid in the stomach. There is no such acid as sugar acid. Again he says



that instead of "supplying the stomach with nutrition, it is filled with a caustic, etc." A caustic is an agent that destroys tissue. Does the most concentrated solution of sugar destroy tissue? It certainly does not. Sugar is *not* a caustic.

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## The Action of Sugar on the Teeth.

By J. A. VUILLEUMIER, D.D.S.

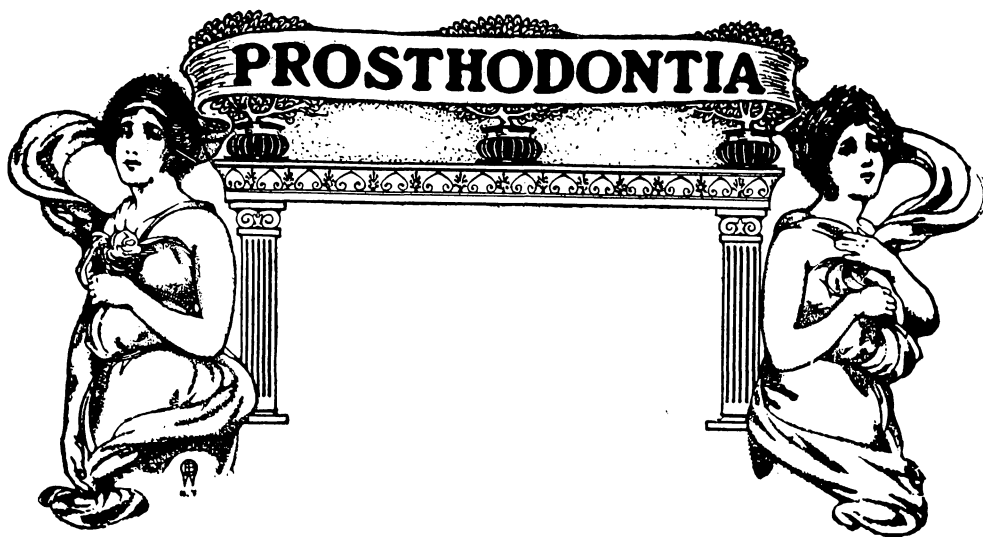
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In the November issue of ITEMS OF INTEREST appeared an article on sugar, read by Dr. Roessler before the N. J. State Dental Society. From the discussion resulting on the paper it appears that the essay read by the doctor was received favorably, and this fact leads me to add a few words.

*The statement that sugar is crystallized acid is absurd.*

The difference between sugar and an organic acid, both having the same kind and number of molecules is as great as the distance between the earth and the moon, figuratively speaking. The present methods of manufacturing sugar have been so largely improved on over those of years past, especially since the use of the polariscope, that we obtain an unusually refined quality of sugar from the market. Poor sugar, especially glucose, is made out of starch by the action of  $H_2SO_4$ , which, in rare instances, has been known to contain arsenic. The danger of sugar on the teeth is the following:

*Badly cleaned* teeth are covered with a slimy deposit in which microbes live. If there is sugar in the saliva, they convert sugar into lactic acid and acetic acid, and it is probable that these acids, being *in statu nascendi*, affect the teeth. Every acid *in statu nascendi* is able to do much damage which would not occur when diluted with saliva. This mucous coating becomes hardened by the action of the acids so that the saliva does not come in direct contact with the enamel. Starchy food, which chemically is nearly sugar, is insoluble, and becomes converted into glucose only by the action of the saliva during prolonged mastication. *That* sugar is not enough to penetrate the mucous coating of the teeth and at least only faint traces will get there. But if concentrated sugar is taken into the mouth it will be taken into the coating more so, according to the laws of osmosis. This would then afford a chance for the *bacilli acidi lactici* to split the sugar molecules into lactic acid, and lactic acid is the great decalcifier of the organism.



## **Hand-Carved Crowns: With Specially Devised Appliances for Measuring and Controlling the Shrinkage of Porcelain.**

By F. T. VAN WOERT, M.D.S.

*Read before the Central Dental Association of Northern New Jersey, October, 1910.*

The subject which I have to present to you this evening has to do with ceramic art exclusively, and I hope to be able to show that it has a wider field in dentistry than is generally considered at present.

Porcelain teeth and crowns now upon the market are a wonderful improvement over those of the past and we are looking forward to a nearer perfection in those which are made for plate and bridge work. But the artificial crowns which are available to-day fall far short of meeting the demand in every particular.

There is a limited number of molds and these are very much alike with the exception of size. There is no particular type or classification of types, and if we are to imitate the lost organ it must be done by considerable grinding, which in many cases is very unsatisfactory and requires more time than would be needed to carve and fuse a crown specially for the case, and when finished, particularly the bicuspid, the resultant tooth is lacking in the all-essential, masticatory properties. This is a defect which, in many cases, causes them to break easily and produces pathological conditions in and about the root, often resulting in the loss of one or more of the teeth. Hence, it is seen that such porcelain crown work is particularly for cosmetic effect, and even this is limited to incisors, cuspids and bicuspid of the upper arch. As a result, gold

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has been resorted to for the restoration of lower molars and bicuspid, making conspicuous and hideous the mouths of many otherwise fine-looking people.

## Gold Shell Crowns.

Gold crowns and bridges have, and always will have a place in dental art, but that they are grossly abused must be apparent to all of you. A great many good teeth have been sacrificed to this system because it has been the easiest way of avoiding a

difficult operation.

The introduction of the cast-gold filling has, in a measure, corrected this, but there are still many who resort to the shell crown because of the comparative ease with which it may be handled. In the majority of cases where crowns are necessary porcelain is by far the best material at our command, if the operator is willing to give the time and exercise the skill for an exact reproduction of the lost organ.

## Downey Crown.

One of the early efforts in this direction was the Downey crown. This crown is constructed as follows: A cap or matrix is fitted to the end of the root and iridio-platinum dowels are fitted into the canals and soldered to the cap with a sufficient length of it protruding above so that a facing of suitable size and color can be soldered to it. A body is then selected which will fuse at a lower temperature than that of the facing. With this the balance of the contour is restored, making a very practical operation, in many cases.

One of the greatest difficulties in this method is the blending of the colors between the facing and the added body. If this is not carefully done the line of demarcation between the two is so distinct that in many cases the object sought is lost. Still another defect is in the lack of strength. The line of union between the facing and the body is a particularly weak point: still this is very much more artistic than using the stock crowns. Later, in the perfecting of the lower fusing or inlay body, stock crowns with platinum pins were fitted to pure gold or platinum caps, the space being later filled in with a low fusing body which made a very accurate and perfect fitting crown. This method was very popular for quite a long time, but the pins proved to be so soft that the crowns were displaced under the stress of mastication.

## Author's Use of Biscuit Teeth.

On the abandonment of this method I was driven to the extremity of sending to the factory for crowns in the biscuit, recarving them, and baking in an iridio-platinum pin, and then fitting them to the ends of the root as before described. This proved by far the most satisfactory of any method I had tried. But, unfor-

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tunately I had to deal with the same difficulty before mentioned, in that I was limited practically to the incisors, cuspids, and bicuspid of the upper arch. The cuspid and bicuspid could be converted in some cases to suit the demands for restoration in the lower.

### **Author's New Method.**

These methods drove me to a series of experiments which resulted in the following: First, a device by which the shrinkage in porcelain could be brought to the minimum and at the same time a maximum in strength be secured. Second, a simple method of securing these results through the compression of the porcelain. Third, an accurate system of measurements for the allowance of shrinkage. This latter being so variable, I was forced to a more extensive investigation than I had first supposed possible.

In my earlier experiments I confined myself to the amount of pressure put upon the body of the mold, regardless of the quantity it contained. Later I became convinced that this was far from accurate, and I adopted the plan of compressing different quantities of body in the same space, which gave me very much more accurate results, and I think I have established the minimum in shrinkage and the maximum in strength.

To obtain these results I was obliged to construct special instruments which I have with me for your inspection and criticism. Also I have for exhibition the result of some of these final experiments together with those of the standard make of teeth.

One thing in particular must be taken into consideration, which is, that bodies of the various manufacturers vary perceptibly in their shrinkage and as to the quantity that can be compressed in the same space; also the method of fixing or preparing the bodies for compression in the molds. I find that in the case of two of the leading manufacturers that three parts of body to one of tragicanth jelly gives me the most satisfactory results. I have here a mixture which I will pass around. It is about the consistency of a good stiff putty and when dried under pressure can be handled or carved without danger of breaking. When compressed upon a platinum base as shown and described it should be allowed to stand over night and then be gradually heated until the Melotte's metal in the base of the mold is thoroughly melted, when that portion of the mold can be removed and the other subjected to a high heat, about 400 degrees, which will biscuit the body in a few minutes. The platinum cap should be freed or cleansed of the shellac so as to permit it to go to place on the model. After this the balance of the mold can be separated and the piece removed to mount in articulated casts for carving.

(Following the reading of the above, Dr. Van Woert delivered a clinical lecture fully demonstrating his new method. He exhibited a

## PROSTHODONTIA

screw press of his own devising, in which the pin and cap, after removal from the natural root, are held firmly in Melotte's metal, in the bottom of a chamber, in which is placed the porcelain body. The press is then screwed down and the porcelain so tightly compressed that Dr. Van Woert has been able to reduce the subsequent shrinkage when fused, from one-fifth, which is the average shrinkage of most porcelain bodies, to as little as one-tenth. This mass of porcelain compressed about the dowel and root cap is removed from the press, biscuitied and then placed upon the articulated models and carved. In conjunction with this carving, Dr. Van Woert exhibited a most ingenious set of calipers with which, by knowing the shrinkage of the body to be used, he is enabled to carve out of his biscuitied mass the type and form of tooth which is required for the case in hand, and he does this so accurately that when fused, this hand-made and carved crown exactly fits the space and place for which it had been constructed, meeting the requirements at all dimensions, conforming with the approximal and occlusal contacts to a nicety. He exhibited such crowns beautifully carved, and beautifully shaded, all made in a single fusing, from one mass of his compressed porcelain. The entire method is too technical to be better explained without illustrations, and as soon as Dr. Van Woert has perfected his appliances to his own satisfaction, a second paper on this subject, fully illustrated, will be published in *ITEMS OF INTEREST*. This will be very shortly.)

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### Progression or Retrogression.

By DR. W. H. DUDDY, Boston, Mass.

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There seems to be a wave of moral reform passing over the land, and it has finally reached the dental profession. At last the professional conscience is aroused. It has been lethargic for some time under the influence of the almighty dollar. Instances are occurring repeatedly which indicate a great desire by dentists, to use their skill for the welfare of their patients. Some of the things brought to light relative to certain branches of dentistry are promising omens, and, if pursued, will give to dentistry its proper position among vocations.

It is encouraging to read the article contributed by Herman E. S. Chayes, D. D. S., in the October number of *ITEMS OF INTEREST*. He places his proposition fairly before the profession. He supports his contention with numerous illustrations, the lesson of which no argument

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can destroy. He shows what bridgework really is, in a large percentage of cases, as it is performed in the mouth.

### **Special Skill Required in Bridgework.**

Every dentist knows that bridgework requires manipulative skill of a high order; he also knows that very few dentists possess such skill; and that very few are so conscientious in their work that they use this skill even if they possess it.

In order to do bridge work with an approximate degree of accuracy, one must be a natural mechanic—that is, he must not only be able to produce a finished article, but he must understand mechanical laws as they operate in the mouth. He must be conscientious in the performance of minute details. Glance around among your professional confrères, and note how many can honestly claim these necessary qualifications. If this be true, it necessarily follows that very few dentists should do bridge-work.

Bridgework, when accurately and skilfully constructed, is of inestimable benefit to the patient, and an honor to the dexterity and patience of the operator; when not so constructed, it is an imposition on the patient, and a disgrace to the operator.

The results of bridgework, as it is practised, are loosened teeth, diseased gums, dissatisfied patients, and a satire on dentistry in the esthetic sense. The phrase “art and science of dentistry” appears incongruous in the face of clearly visible facts. In these days the importance of the dollar is so magnified that it pushes into obscurity all high ideals. In the language of the poet, “A thing of beauty is a joy forever;” so bridgework should be, but the picture presented is often repugnant, and difficult to erase from the mind.

### **Why Bridgework Is Poorly Done.**

It is humiliating to think that such splendid principles as apply in bridgework are so distorted by unscientific and unscrupulous dentists. However, I will say, by way of qualification, that the trouble is not altogether with the dentists. It can be traced farther back, to the system which devotes so much time to teaching medical branches, and ignores the *thorough* teaching of dentistry. If the majority of graduates could spend a year or more in a dental laboratory, they would receive the practical mechanical training which is indispensable to a dentist who desires to treat his patients fairly. It would be just as reasonable for builders of ships to learn the theory of carpentry, and expect to be able to construct battleships, as it is to expect dental graduates to have a genuine knowledge of dentistry, because they have emerged from a combination of medicine and dentistry with the latter buried under the former.

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### Incompetent Teachers.

Teachers, speaking generally, do not understand the art of teaching. They are mostly recorders and reproducers, receivers and transmitters. Judging from the results of their teaching, one is justified in concluding that they have given little thought to the action of the mind. They undertake to teach more in a few years than could be learned by uncommonly gifted mortals in twice the time. The result is that graduates begin practice with a cloud of vagueness hanging over them, and nothing definite or substantial to rest upon. Change the system. Train the fingers to do the work required of them; train the eye to be in harmony with the fingers; train the mind to use its reflective process in regard to both eye and hand, and you will lay a solid foundation for future usefulness. In other words, you will develop the faculties that a dentist should have developed in full and rounded measure.

Educators are just beginning to understand the limitations and natural development of the mind, and they are profiting by the slowly acquired knowledge; therefore, it would not be unbecoming for others to follow their example. About all that graduates of our high schools know, after they have studied several languages, is the names of the languages; as for having a real knowledge of any one of them, not excepting English, that is preposterous. The case with dentists is very similar. They remember the names of the branches studied; but seldom do they remember much about them.

The method of education of to-day can be best described by the illustration of Bulwer Lytton. He said it was similar to taking a bottle, and pouring a pail of water all over it, rather than pouring the water slowly into the mouth of the bottle. The time is at hand when more of that virile common sense with which people are so liberally endowed should be used. Through years of experience facts have been born which are bound to destroy many fanciful theories of the past. It is as plain as it is sad that a dentist's financial success to-day depends more on his ability as a salesman than as a dentist. Taking money for most of the bridgework that is performed is like taking alms from a cripple. The illustrations in the article to which I have alluded represent actual specimens. The writer says: "These specimens are not the work of all around incompetents: authors, clinicians, professors of prosthodontia, figure among those at whose doors the existence of these specimens may be laid." If the men presumed to be at the top of the profession would set a better example, those beneath would most likely follow the same course. Let us begin again and do what we should—save teeth, not destroy them. The article by Dr. Chayes is more valuable than countless pages of theories, for it states incontrovertible facts in a very convincing manner.

It is not my intention in any way to underrate the dental profession. I have in mind the single thought, of the relation of that profession to the public, who are dependent upon the honesty and professional conduct of the dentists whom they patronize for the saving of their teeth. It is my earnest desire to see that profession truly self-reliant, supported by its own merits, having a thorough knowledge of the branches that apply to it, and faithful to the people who support it. Civilization will not be advanced by human beings acting like birds of prey.



## Contribution to the Knowledge of Retention in Class II.

By HERBERT A. PULLEN, D.M.D., Buffalo, N. Y.

*Read before the American Society of Orthodontists at Denver, Colo.*

In the retention of Class II the principal factor involved is the retention of the mesio-distal change in occlusion. Secondarily, however, and of quite as much importance are the factors involved in the retention of the shape of the dental arches, the change in depth of the underbite, the corrected infra or supra-occlusion, and the positions of rotated teeth.

The mechanical principles involved in the retention of Class II require the use of the buccal spur and plane, the inclined incisor plane, the plate and buccal planes, the buccal arch, the lingual arch, and intermaxillary force. Of these principles, the inclined plane, the buccal spur and plane, and intermaxillary force are chiefly concerned in the retention of mesio-distal changes in Class II.

According to definitions which the writer formulated for a treatise on retention several years ago, the inclined plane and spur and plane may be designated as occlusal retention, and the use of intermaxillary force as intermaxillary retention. In order that you may understand the writer's reasons for thus classifying these mechanical principles, a repetition of the definitions referred to may be somewhat self explanatory. Occlusal retention was defined as follows:

### **Occlusal Retention.**

"Occlusal retention is the maintenance of the normal occlusal positions of the teeth, individually or collectively, through the normal functional influence of the inclined planes of the cusps, and the contributory forces gained through restoration of arch integrity."



Although the spur and plane and inclined plane cannot be classified strictly in accordance with this definition of occlusal retention, yet if we regard all inclined plane attachments as additional or elongated tooth cusps, these mechanical principles involving the use of the inclined plane can be correctly defined under no other head than occlusal retention.

In the same treatise on retention before mentioned, intermaxillary retention was defined as follows :



Fig. 1

## **Intermaxillary Retention.**

“Intermaxillary retention consists of the continuation of the use of intermaxillary force in cases of mesial or distal shifting of occlusion in such a manner that a reciprocation of force and resistance is established which is capable of the retention of the mesio-distal changes in occlusion.”

Considering, then, the retention of the mesio-distal changes in occlusion, there have been these two forms of retention in use, occlusal retention; which is represented by the cusp retention of molar and bicuspid teeth, or by exaggeration of cusp influence through use of elongated spurs working against each other on the principle of the inclined plane; and intermaxillary retention, represented by the continuation in use of the intermaxillary elastics.

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### Occlusal Retention Without Spur and Plane.

Furthermore, occlusal retention proper, or the maintenance of normal occlusal positions of the teeth through functional influence of the inclined planes of the natural cusps, can be relied upon only in a small percentage of cases, and these usually of a simple nature and of a tender age. In the first division of Class II, where there has been very little narrowing of the upper dental arch, in cases not over ten years of age, occasionally there may be

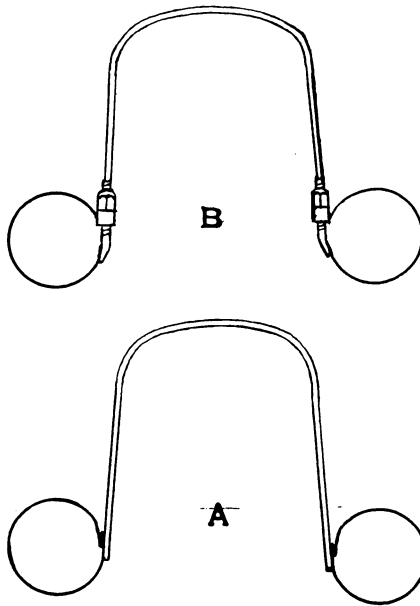


Fig. 2

found a case which responds readily to treatment, and as readily to natural cusp retention of the mesio-distal change in occlusion.

Fig. 1 illustrates such a case which proved to be of the kind mentioned as requiring no artificial retention. It may be possible that the length of time of wearing the expansion arches and intermaxillary elastics has much to do with this lack of need of artificial retention, since in this particular case, nearly a year's time was consumed in making the mesio-distal change, and a great deal of development of the arches was going on during that time. There is no doubt that these cases are our most successful ones, since there is no interference with development from the retaining appliances.

In the second division of Class II, especially in the subdivision, cases are still more amenable to treatment without the need of artificial retention of the mesio-distal change in occlusion, for it seems that the expansion of the upper arch appears to provide a more secure cusp influence than in the first division of Class II.

Occlusal retention, however, without spur and plane reinforcement for Class II cases, is a very uncertain expedient, and in no way to be de-

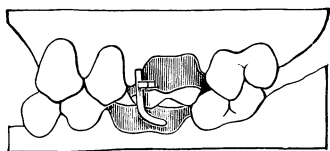


Fig. 3

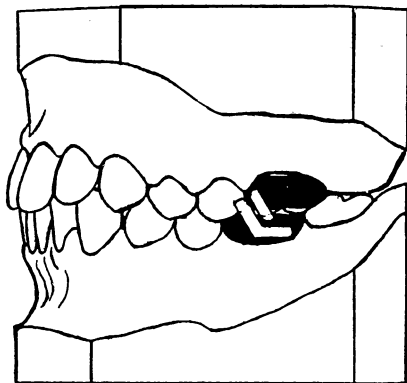


Fig. 4

pended on with this difficult class of cases, for it will often happen that in the cases in which no artificial retention is provided, a return of the distal occlusion is liable to occur, necessitating a reinauguration of treatment.

## **Spur and Plane Retention.**

The history of the spur and plane method of retaining mesio-distal changes in occlusion proves it to be admirably adaptable, when properly constructed, in some of the simpler cases, but a failure in the more serious cases. The causes for these failures have been several; first, the lack of reinforcement of the molar bands upon which the spurs and planes were used; second, the use of too thin molar bands; third, the breaking and bending of spurs through the force of mastication; fourth, the resistance or tendency to return in the more serious cases is entirely too great for any inclined plane retention.

In referring to the simpler cases of distal occlusion the writer means the younger cases in which the bicuspid, cuspid and second molars of the permanent set have not erupted, and in which the shapes of the arches are quite normal, with no infra or supra-occlusion.

Fig. 3—From Kirk's Text-book of Operative Dentistry. Cut supplied by courtesy of Lea & Febiger.

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In discussion of the spur and plane method it might be stated that success with it depends largely upon the careful observance of certain details in construction, such as the use of proper bands of sufficiently strong material, and the accurate adjustment of antagonizing spurs.

As an example of the proper use of bands, if the molar clamp band is chosen to carry the buccal spurs, a lapping band should be used, the lingual screw removed, the lap soldered, and the lingual arch soldered directly to the band as in Fig. 2-A.

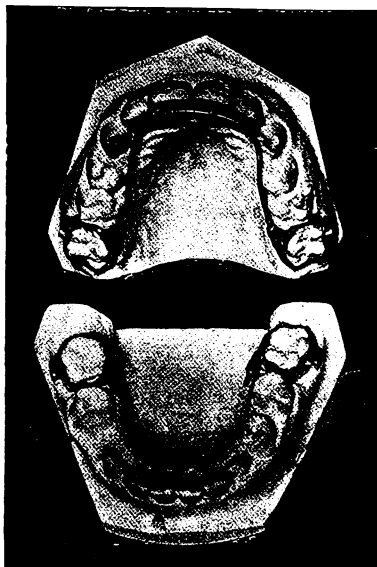


Fig. 5

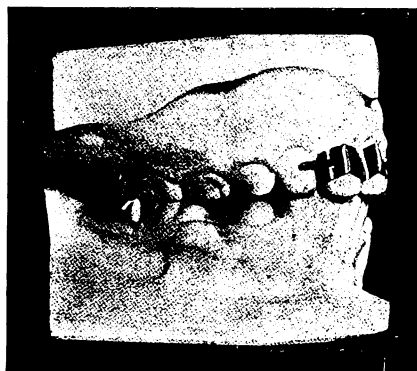


Fig. 6

The old method of using an open clamp band and soldering the lingual arch to the end of the lingual screw, as in Fig. 2-B, is mechanically imperfect, as the strain of the apparatus eventually loosens the clamp band because of the play of the lingual screw in the tube. As far as strength of band material is concerned, bands of less than 34 gauge are apt to break from the strain.

Fig. 3 represents Dr. Angle's method of adjusting the buccal spur on lower arch to the buccal plane on the upper arch. Owing to the length of the lower spur, it sometimes becomes bent or broken in mastication.

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Figs. 5, 6, 12, 13, and 18 from Johnson's Text-book of Operative Dentistry. Cuts supplied by courtesy of P. Blakiston's Sons & Co.

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The modification of this method by Dr. Watson is shown in Fig. 4, inclined spurs being used on both upper and lower clamp bands, each one extending about an equal distance beyond the plane of occlusion, thus allowing the use of shorter spurs which are less liable to be bent or broken.

The inclined spurs should be carefully adjusted and the attachment reinforced with solder.

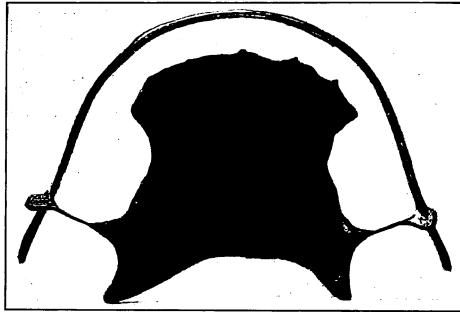


Fig. 7A

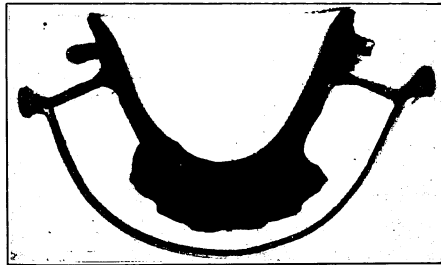


Fig. 7B

In cases of a little greater severity, though of about the same age, the spurs and planes should receive some support from the lingual arches as shown in Figs. 5 and 6.

It is apparent in Class II, Division I retention, that to retain the shape of the upper arch, especially the normal positions of the upper incisors, either a lingual arch attached to incisor bands as in Fig. 6, or a labial arch extending to the molar bands, must be used.

Up to this time the writer has been discussing a fixed retaining apparatus with bands cemented upon the teeth, and it may be of interest to speak of the removable appliances constructed for the purpose of retaining Class II cases using spur and plane, or double spurs.

**Removable  
Retainers.**

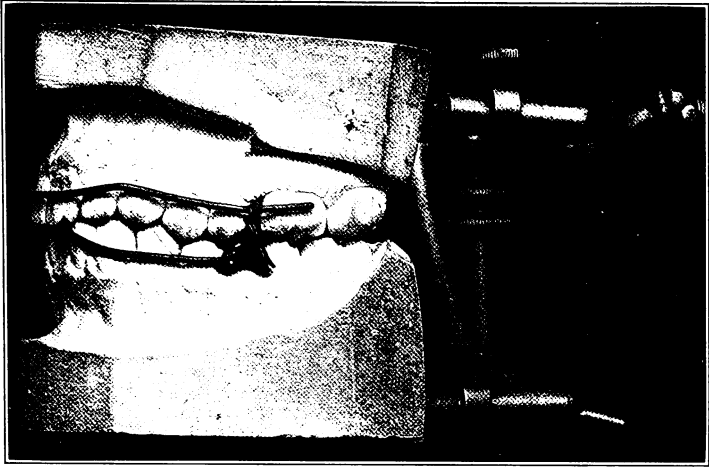


Fig. 8A



Fig. 8B

In connection therewith it may be well to state that our German confrere, Dr. McBride, of Dresden, has devised and constructed what seems to be the only practical removable apparatus of this nature for Class II, Division I cases.

This apparatus (Fig 7A and B) consists of partial plates upon the

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upper and lower arches connecting with labial arches by a flat piece of metal extending between the first molar and the first bicuspid in each arch, and at the point of buccal intersection of the labial wire and the metallic

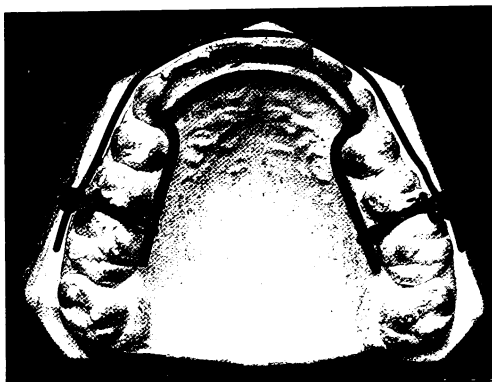


Fig. 9A

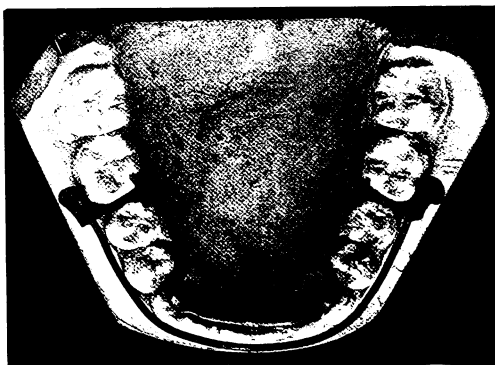


Fig. 9B

piece are fastened the inclined planes which retain the mesio-distal positions of the dental arches.

Fig. 8A and B illustrates the action of these inclined planes and the positions of the labial arches.

An improvement in construction of this appliance, shown in Fig. 9A and B, does away with the plate, leaving simply the upper lingual inclined plane attached by a lingual arch.

With this apparatus there is greater freedom of the individual teeth than with a fixed appliance, but it is impractical for use in cases in which

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the deciduous molars are in process of being shed, since there is no apparent means of fixation of the retainer.

Its use, then, is confined to the older cases in which the bicuspid and cuspid are erupted. The fact that it is removable does not lend attractiveness to it, even though a duplicate apparatus must be furnished for each patient.

Having briefly dealt with the methods of spur and plane retention of mesio-distal changes coming under the head of occlusal retention, so to speak, the other form, intermaxillary retention, is next to be considered.

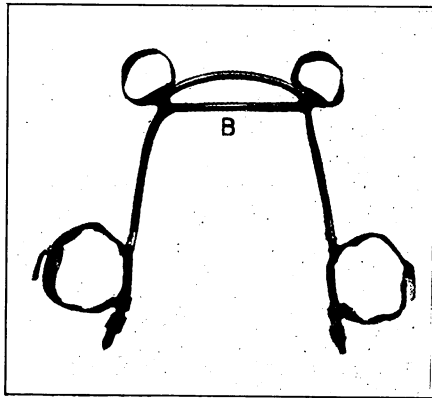


Fig. 10

### **Intermaxillary Retention.**

In this connection Dr. Watson in 1908 presented some valuable combinations for the retention of the first division of Class II, the principle of which involves intermaxillary retention.

As illustrated in Fig. 10, the six lower anterior teeth are retained by banding the cuspid and uniting these bands with a lingual wire resting above the lingual ridge. A lingual arch is then bent to fit against the lingual surfaces of the bicuspid, resting against the cuspid bands and fitting closely under the ends of the wire attached to the cuspid bands and crossing the lingual surfaces of the incisors in close proximity to the gums. The distal ends of this lingual arch are attached to the mesio-lingual angle of the molar clamp bands with lingual screws pointing distally, and the hooks for intermaxillary elastics are soldered to the buccal surface of these bands.

The object of the appliance being thus made in two separate pieces is threefold :



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1—The six anterior teeth, especially the cuspids, are more perfectly retained with a lingual wire from one cuspid band to the other than by a lingual arch attached to molar bands and resting against these six anterior teeth.

2—The teeth thus retained in sections have an opportunity to become self-supporting more rapidly than when all the teeth in one arch are bound together, as it were, by a lingual wire attached firmly to cuspid and molar bands.

3—The lingual arch, attached from molar to molar only, may result in opening the bite by allowing the molars to elongate.

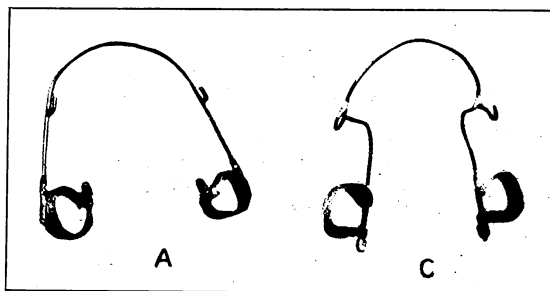


Fig. 11

The upper appliance, engaging with the lower with intermaxillary elastics, Fig. 11A, consists of a buccal arch, of 18 to 20 gauge iridio-platinum (20 per cent. iridium), sliding into close fitting buccal tubes on first molar clamp bands, a little collar soldered to either side of the arch just in front of the buccal tube, causing the pressure to be equally distributed. The intermaxillary elastics being adjusted so as to preserve a proper occlusal balance, complete the apparatus. The retention of individual teeth, such as rotated teeth, etc., is independent of this appliance.

A modification of the appliance on the upper arch, described by Dr. Watson, consists of a labial arch (Fig. 11C) around incisors attached to a partial lingual arch, passing over the arch between the cuspid and first bicuspid, and attached distally to the mesio-lingual angle of the molar clamp band with screw pointing distally. This latter appliance serves to retain expansion of the arch in the bicuspid region, and through the use of intermaxillary force, the form of the anterior portion of the upper arch, as well as the normal mesio-distal relationship. In the wearing of these appliances for the retention of Class II cases, the intermaxillary elastics

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may be worn at night, and after a time the elastics may be discarded, leaving the buccal and lingual arches in position to retain the form and size of the dental arches for a still longer period.

In discussing Dr. Watson's apparatus, the point was brought out that a lingual wire soldered to four bands, upon the two cuspids and two molars, for example, formed a retention that was too rigid, not giving the teeth an opportunity to become self-supporting through occlusion, etc.

In apparent contradiction to this theory, the writer wishes to present a few forms of the four band retainers which have given satisfaction in the retention of certain cases in Class II, though it is not the writer's

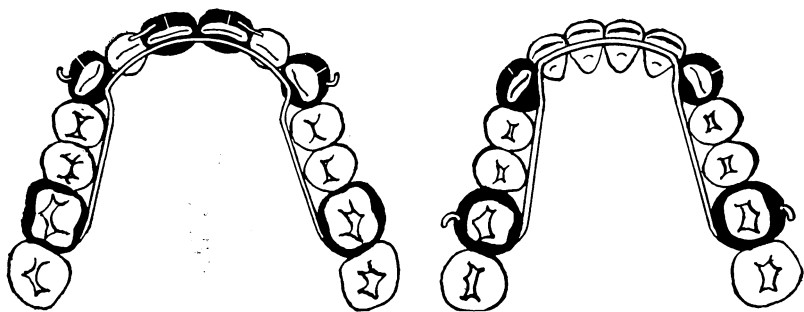


Fig. 12

intention to discount in any way the value of the principle of Dr. Watson's appliance.

Fig. 12 represents the occlusal view of an upper and lower arch, each provided with a lingual arch accurately fitted to the lingual tooth surfaces and soldered to the individual bands on the plaster model. The lingual screws were removed from the clamp bands used in treatment, the lapping ends of the bands soldered, after which the lingual arch was attached thereto as to a plain or seamless band. The plain bands upon incisors and cuspids were pinched and soldered on the labial surfaces, so that the soldered joints would not interfere with the fitting or attachments of the lingual wire.

A side view of the appliances with intermaxillary elastics in position is shown in Fig. 13. The construction of the bands in the cut is not as the writer now makes them, however; the bands should be fitted close under the gum margin as in Fig. 14, and should be made quite narrow in width. The objection may be raised to this appliance that it is too complicated, and that too many bands will prevent the proper cementation of

the appliance in position. In answer to this, the essayist wishes to say that it has not proven complicated nor difficult to place in position in his own practice, in certain cases in which it is preferred to other appliances for Class II retention, as, for example, in those cases in which the under-bite does not show supra-occlusion of the incisors.

A modification of the principle of the lower retainer made in separate parts is illustrated in Fig. 15. The lingual arch is soldered to the cuspid bands and extended so as to be against the lingual surface of the molar

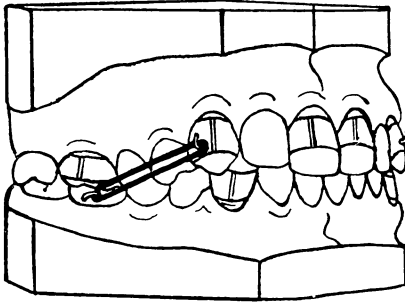


Fig. 13



Fig. 14

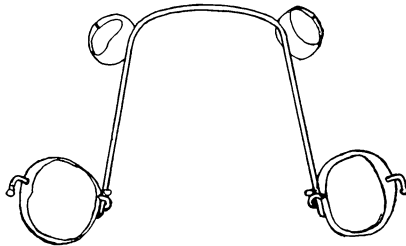


Fig. 15

bands. Small wire rings are attached to the lingual surfaces of the molar bands and the lingual arch extended through them, a lug anterior to the rings preventing the collapse of the anterior teeth. The molars in this case have a little more individual freedom, but it is doubtful whether they can elongate as much as with the Watson retainer.

## Retention of Developing Arches.

Inasmuch as the cases which come under the specialist's care are often under treatment when the permanent teeth are in course of eruption, such emergencies in retention as the construction of special appliances for such cases must be provided. Fig.

16 illustrates an upper arch of a Class II, Div. I case, in which space for

the unerupted cuspids had to be conserved by attaching the lingual arch to the central and first bicuspid bands, upon which latter were soldered the hooks for the intermaxillary elastics. A still younger case in which the bicuspids on one side were unerupted required a buccal extension of the hook from the lingual arch, as shown in Fig. 17.

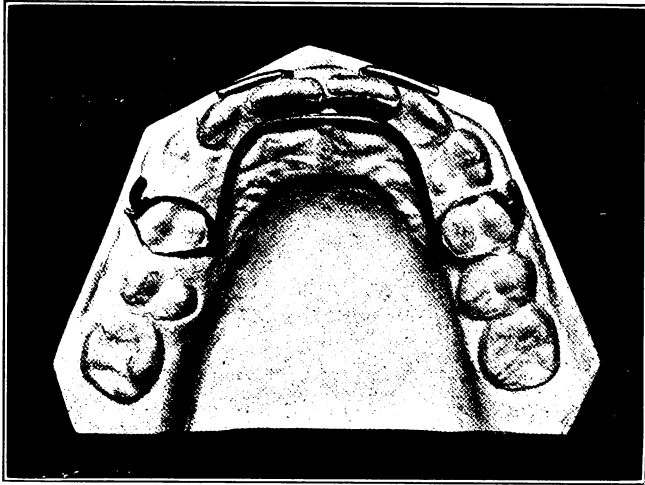


Fig. 16

## **Supra-Occlusion in Class II.**

It is to be noted that supra-occlusion of the incisors is a feature of common occurrence in both the first and second divisions of Class II, and it is necessary to provide for the retention of the corrected anterior occlusion, at least, in these cases. For this purpose the inclined incisor plane, usually in combination with the upper lingual arch, admirably serves the purpose.

Fig. 18 exhibits such a combination of the lingual arch to which is attached Dr. Young's form of skeleton inclined plane, the intermaxillary hooks being soldered to the cuspids bands. This skeleton inclined plane has proven of very great value to the writer in the retention of incisors in cases of supra-occlusion of both Class II and Class I.

Dr. Rogers has suggested a combination of inclined incisor plane and intermaxillary force for the treatment of Division I, Class II, shown in Figs. 19 and 20. The inclined plane is a solid plane of platinum gold attached to the lingual arch, which is soldered to the upper central bands in the present instance. The intermaxillary hooks are attached to the labial surfaces of the central incisor bands, being extensions from the

labial wire. The same appliance is used for the retention, except that a lower lingual arch is substituted for the expansion arch.

In constructing these combinations, the lingual arches may be made of platinum gold alloy or iridio-platinum, the bands preferably of platinum gold alloy, and the inclined plane, if it be of single piece form, may

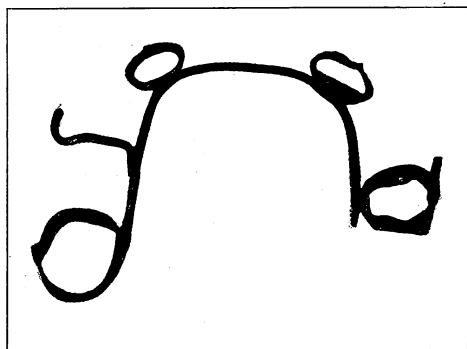


Fig. 17

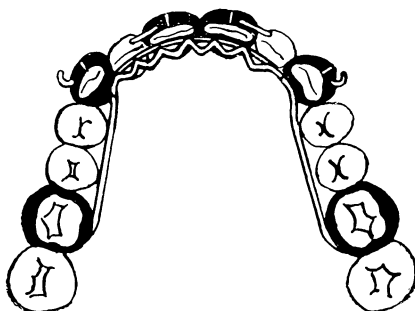


Fig. 18

be made of 24-gauge platinum gold alloy. The lingual arches and the looped plane may be constructed of 18 or 19-gauge iridio-platinum (20 per cent.) wire.

The length of time for the retention of mesio-distal changes in occlusion varies, of course, with the age of the patient, the state of development of the dental arches and the severity of the case in hand. In some of the simpler cases one year is sufficient, in others two or three years' retention will not suffice, and in some cases of the more severe type a somewhat permanent retention, or one that is at least active at night for an indefinite period, seems necessary.

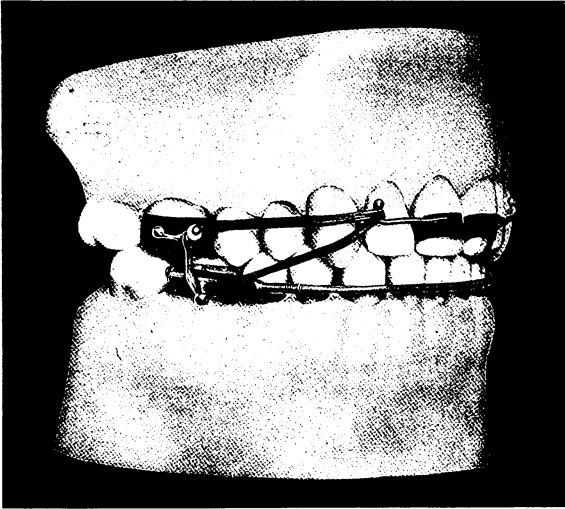


Fig. 19

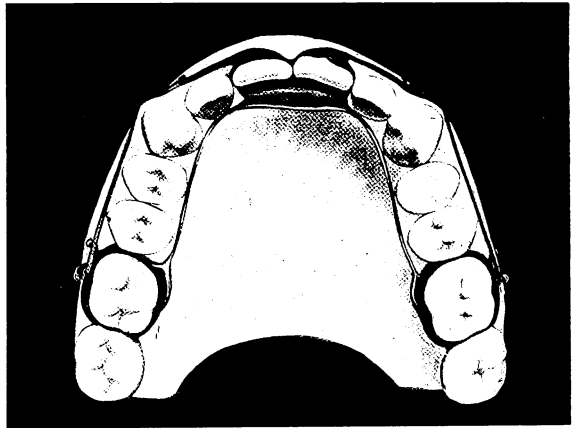


Fig. 20

Several years ago the suggestion that the intermaxillary elastics be continued for retention in Class II met with such favor in practice that the buccal spur and plane method seemed about to be discontinued altogether, and now, after a trial of the intermaxillary retention, many are asking themselves whether or not the action of the elastics is not prejudicial to, or preventive of, the fixation principles of retention and therefore inhibitive of the best results of treatment.

The intermaxillary retention seems particularly adapted to the mouth-breathing cases of the first division of Class II, since the elastics serve the double purpose of retaining the mesio-distal change in occlusion and of holding the mouth closed.

It has been claimed for the intermaxillary retention that the continuously acting force keeps up a gentle stimulus to growth of the dental arches. The buccal spur and plane method serves only to retain the mesio-distal change in occlusion, and in the writer's practice its use is limited.

It is true that fixation of several of the teeth in each arch by lingual arches and bands tends to retard development, but in these cases in which development is most rapid, a short length of time for retention offsets this objection, and in the adult cases the period of development is so near complete that the fixed retention with the lingual arches and the use of the intermaxillary elastics is not objectionable.

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#### Discussion of Paper by Dr. Pullen.

I do not know of any more practical subject for discussion than that presented by Dr. Pullen. Doubtless all of you, like myself, have some satisfactory methods of retention; the majority of us, however, expect difficulty in Class II cases. One of our members remarked yesterday he guessed he would specialize with Class I and Class III cases, leaving out Class II! (Laughter.)

Dr. Pullen has pointed out that the two principal plans of retention involve artificial occlusal retention through the occlusal spurs, and intermaxillary retention by means of the Baker elastics. But so much time was taken up in explaining appliances that it rather detracted from the importance of knowing when to use the various forms of retention. The difficulty I have had with the occlusal retainers has not been entirely from the force of mastication, nor entirely from the weakness of the appliances themselves, although I have had the same difficulty that Dr. Pullen has had in the occlusal spurs being broken and bent, and the teeth tipped and twisted from the force of mastication. But the greatest trouble has been from the antagonistic muscular pressure at night. The appliances may prove very effective in the day time, but at night the tendency of the muscles to revert to the old habit causes a greater strain. Consequently, I would not think of using occlusal spurs in any case without some such support as a lingual arch, and extensions to prevent tipping of the molars,

## ITEMS OF INTEREST

etc. I think Dr. Watson's paper, referred to by the essayist, brought out clearly the advantages of the intermaxillary elastics in retention.

The point of consuming a longer time than is customary in bringing about the restoration of normal mesio-distal relations in Class II cases is important. Intermaxillary elastics more nearly take the place of restored muscular action than do occlusal spurs. Occlusal spurs create an unnatural condition, which the muscles start to antagonize, whereas with light intermaxillary elastics the action is more nearly like the muscular pressure. In Division II, Class II, you have more natural muscular action than in Division I. In Division I there is a lack of proper muscular function in the muscles of mastication and in the muscles of the lips, and in Division II there is more natural muscular pressure of all of the muscles.

Discussing appliances, I would not wish to give up a well fitted clamp band for a plain band because I had difficulty in the clamp band loosening. I think the main reason for the loosening of a clamp band when the lingual arch is attached is in the soldering of the head of the screw post to the clamp band. It is not in the right place. The clamp band as usually sold in the market, when tightened up, leaves the head of the screw post at about the middle of the lingual surface of the tooth, and any twisting motion pulls one edge of the band away from the tooth. By using a larger clamp band, and having the screw post soldered well back towards the distal angle of the tooth, any twisting on the screw post will be at right angles with the perpendicular portion of the band here. You may let the cement flow in between the screw and the short tube, and such a clamp band is practically proof against any ordinary strain on the lingual arch. There are some objections to having the nut in this position, on account of affording a place for the accumulation of food. That is one of the principal objections to the use of the clamp band, of course.

Dr. Pullen suggested that some doubt has arisen as to whether or not the continued action of the elastics may not prove prejudicial to the fixation of the teeth. If so, it is because too heavy an elastic is used for continuing the retention. If you follow Dr. Watson's suggestion and use very light elastic, and then continue with even a less pressure, all would be well. I make a habit of testing from time to time as to whether the patient is able to bite backward. A too heavy elastic may destroy the whole occlusion sometimes, whereas a light one would answer the purpose splendidly.

Wherever it is possible to attach a lingual arch with a loose joint instead of a soldered joint, do so. If you can attach the lingual arch by tubes soldered to the ends and slipped over the screw post, it is much better, and allows the bucco-lingual tipping of the anchor teeth to induce a normal occlusion of the molars, and the teeth will settle down much



more quickly into their normal occlusion relations than if the bands are rigidly attached. Wherever it is possible, I should even prefer having attachment to the bicuspid or cuspids instead of the molars, because if your retention causes a little tipping or twisting of the bicuspid teeth, it does not affect the whole occlusion as much as in the slight tipping of the molar.

Dr. Pullen, in the beginning of his paper, gives  
**Dr. Dunn.** as the principal factor involved in the retention of  
 Class II the mesio-distal change in occlusion. Sec-  
 ondary, is the shape of dental arches, the change in the depth of the under  
 bite, the corrected infra or supra-occlusion, etc. It seems to me that if

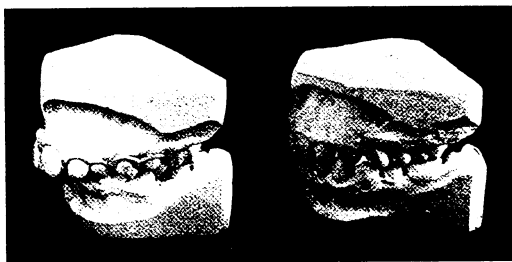


Fig. 21

the doctor had included in the principal factor the change in the depth of the under bite, he would have been more nearly correct; for in the largest percentage of the cases coming under this class, it would matter but little how long the mesio-distal change was retained. Without the change in the vertical length or height of molars or bicuspid, permanency would be out of the question.

This vertical change is as much a principal factor in retaining Class II as is the mesio-distal relation. In fact, in my own mind, I believe it to be of more importance; for the opening of the bite brings about a change in the temporo-mandibular articulation, which greatly facilitates the bringing about and maintaining of this mesio-distal change, and explains in the case presented by Dr. Gray the reason for retainers not being necessary.

Many cases could be cited wherein during treatment of expanding arches, and the rotating of teeth, the vertical length of bicuspid and molars had increased to the extent that the normal mesio-distal relation of the jaws had taken place otherwise, unaided, and the retention of this new relation was unnecessary.



## ITEMS OF INTEREST

The case shown (Fig. 21) is another such as that presented by Dr. Gray, and if you will study it closely you will note that the vertical lengths of the bicuspid and molars have increased considerably, although no special effort had been made, mechanically, to bring it about. The only retention being used is a little vulcanite plate to sustain the expanded lower arch. The age of patient was eleven years, and the treatment covered a period of ten months.

I agree, however, with the essayist, that such retention of Class II cases should not be depended on, and that a re-enforcement of normal occlusal retention of some sort should be used.

I cannot too strongly commend Dr. Watson's idea, with some modification, in his retention of Class II, for it comes the nearest to being like Nature's forces that maintain normal occlusion, with a removable appliance of any practicability, yet given us. It allows of greatest latitude in individual tooth settlement, and, at the same time, is most effective as a retainer of cases of this class. It is hygienic, and when thoroughly understood, properly made and adjusted, the result obtained is gratifying indeed.

The modification I speak of is in connection with the upper retainer. The screw-post should be allowed to remain, and the lingual arch adjusted so that a short tube on the end of the arch will engage this screw-post, with the lingual arch at the anterior portion resting at the gingival line. Often in these cases we have a condition where there is rotation of the bicuspid. In order to prevent this arch from dropping down, a band on these teeth may be used, to which is soldered a half staple, to engage the arch. Where bicuspid have not erupted, central incisors may be used. In that case, the seam of bands is allowed to extend so as to engage the labial arch that they may not be forced into supra-occlusion.

In the wearing of the labial arch, I prefer a little play in the buccal tubes, having it so adjusted that it touches on the lower third or occlusal edge of the four incisors. Where we have a lack of development, the pressure at that point, when the lingual arch is properly adjusted, will bring about the needed development very rapidly.

The lower lingual arch is attached in the same manner, and you can use bands either on the incisors or cuspids, utilizing the same principle of staples, making them long enough so that you can, if you choose, bend them around the arch so as to keep it in good position. The arches are easily removed for cleansing, and I think it is the nearest to a perfect retainer for Class II cases yet devised.

It has been my experience that, where hooks are attached to upper cuspids or laterals for the reception of intermaxillary ligatures, the pressure of these ligatures interferes with the proper settlement of the teeth

distal to hooks, and especially so if they are in the course of eruption. Dr. Watson's idea of using the labial arch overcomes this difficulty.

It matters little how skilful the operator, nor how perfect his appliance may be, he will be unable to so apply his force during treatment as to avoid all tipping of the teeth, and for that reason a fixed retainer other than a temporary device is impractical in obtaining ideal results, interfering as it does with the settlement of the teeth so fixed.

If we will but study the development and position of the roots of these moved teeth, their approximation or close relation to one another, and the necessity of their assuming their normal positions at the earliest possible date, in order to obtain the bone development that Nature planned for this particular type of individual, and giving the best results in facial outline and permanency, we will see at once the impracticability of the fixed retainer, other than as I have stated before—a temporary affair to be worn for a very short period.

**Dr. Ottolengui.** I would like to ask Dr. Pullen and Dr. Dunn what they mean by the "under-bite." I am willing to exhibit my ignorance if I can gain enlightenment.

**Dr. Dunn.** I used that term because at the time I could not think of any other term to express the idea, and partially because Dr. Pullen had used it.

**Dr. Pullen.** I used the terms "supra" and "infra" occlusion, etc.

**Dr. Ottolengui.** I will ask Dr. Pullen, then, what he meant by saying that he uses the inclined plane to correct supra-occlusion in Class II. What supra-occlusion does he correct in such cases?

**Dr. Pullen.** I have corrected supra-occlusion of incisors a number of times, if there really is any such thing as supra-occlusion of the incisors in Class II. If there is a supra-occlusion in Class II, we may correct it by driving the teeth down in their sockets as Dr. Lourie says he does. As a matter of fact, I still believe what I have always said, that there is no supra-occlusion of incisors in Class II, but an infra-occlusion of the molars and bicuspid. The inclined plane retains the forward position of the teeth, and allows the elongation of the bicuspid and molars. If they do not elongate the orthodontist must do something to make them.

**Dr. Federspiel.** Does not disuse have a tendency to elongate teeth?

## ITEMS OF INTEREST

**Dr. Ottolengui.** Not to my knowledge. I do not deny it, but I have never heard of it. Loss of occlusion through extraction of antagonizing teeth is a different thing entirely, but the over-eruption of the lower incisors has not yet been proven to have occurred.

**Dr. Morehouse.** Regarding the placing of hooks for intermaxillary retention, on the distal part of the lower molar bands instead of at the mesial, I would like to understand what the advantage is.

**Dr. Pullen.** That was a mistake in the drawing for the lantern slide. The hooks should be at the mesial angle of the lower molar band.

**Dr. Bogue.** I think Dr. Ottolengui has done us a service in calling attention to one or two weak points in the language used. I offer my thanks to him. There are two or three things in Dr. Pullen's valuable paper about which I wished to ask questions as he went along. One is this: If he is dealing with the case of a patient, we will say fourteen, fifteen or sixteen years of age (I am careful to specify), who has a distal occlusion of the first permanent molars, and uses an apparatus on the teeth so fixed that he can advance the first bicuspid, then the second bicuspid, and then, holding everything firmly, advance the lower molars with the intermaxillary band until he gets a correct occlusion of the principal molars,—have you not got such a relation of the permanent teeth as to meet the conditions which I understood you to describe, where the teeth were held by their own inclined planes?

**Dr. Pullen.** To a certain extent, yes. There is a tendency towards a return of the abnormal condition in so many cases as to interfere with the blind following of the theoretical hypothesis suggested by Dr. Bogue.

**Dr. Bogue.** Is there such a tendency if you have absolutely moved your teeth? As I have understood Dr. Dunn, he spoke of an inevitable tipping. I do not assent to that at all. I do not believe the tipping of the teeth we are moving is at all essential to their proper placing in position. They do tip with the apparatus you buy ready-made with horizontal tubes soldered rigidly to the bands.

**Dr. Dunn.** They tip with any apparatus.

## ORTHODONTIA

**Dr. Bogue.** I beg your pardon; with the Ainsworth apparatus they do not tip, and with the Kemple square tube they do not tip.

**Dr. Young.** You are talking about buccal tipping. Drs. Dunn and Pullen mean mesial tipping.

**Dr. Bogue.** That is a horse of another color. When we obey Dr. Watson's caution to move teeth slowly enough anteriorly, we will not have mesial tipping either, because by the process of spreading with the Ainsworth arch, or with vertical, or even with square tubes on the bands, we will hold those teeth upright until they shall have assumed the proper relations occlusally, and the cuspids will then do what Dr. Pullen so graphically described—hold each other in position. Dr. Baker's brother was brought to me at ten years of age, and Dr. Baker's father and myself continued to differ over that boy, and at the last discussion we had I said that the boy's teeth would return to a proper position when the retainers were taken off. In the course of a few months, the retainers having been removed, the teeth, by the action of the tongue within and lips without, had assumed an ovoid position which they did not have at all before, and Dr. Baker recognized that as quickly as I did, and sent me models of the case. My point is this—that Dr. Pullen retains too much! I saw a case of Dr. Ainsworth's four or five months ago, and I wrote to him at once that the patient had consulted me, and asked me what I might do. After obtaining permission from Dr. Ainsworth, I cut off the appliance, and the teeth went back considerably and settled where they belonged.

**Dr. Ottolengui.** I would like to say a word. I did not mean what I said previously as a criticism. I simply wanted to call the essayist's attention to a misadvertence on his part in the use of terms, and I hope that by having done so his true meaning is now more clear. As to the use of intermaxillary force in retention, I believe that we need not be at all alarmed about using continuous intermaxillary force in retaining Class II or Class III. I do not believe it is as easy to move a lower set of teeth forward by intermaxillary force as it is to move the upper arch forward, and for this reason, if you are treating Class III, and you have intermaxillary elastics attached at the molar region in the upper arch, and the cuspid region in the lower, you have practically a stationary anchorage in the lower jaw, because it is practically impossible for this elastic to move the entire lower arch backward, and the stress of the elastic will be almost entirely expressed in moving the upper arch forward. On the contrary, in Class II, with the elastics attached reversely, the more or less stationary anchorage is

## ITEMS OF INTEREST

in the upper jaw, and the elastics exert a stress which some patients will be inclined to relieve by protruding the mandible. Thus we do not express exactly the same degree of force with the same size elastics in Class II as in Class III. We get almost the full stress of the elastics against the teeth in Class III, but there is a more complex relation in Class II; perhaps that is an advantage, because it is desirable to move the mandible as well as the teeth.

If a Class III case be corrected prior to the eruption of the second molars, I believe that intermaxillary force is an absolutely essential factor in successful retention. I more than ever believe that in Class III we have to deal with a lack of development of the upper arch, and, indeed, of the entire superior maxillary bones. Some believe that there is an over-development of the mandible. This I doubt, except in very rare cases, and in these the mandible is over-large rather than over-developed; a monstrosity rather than a pathological overgrowth. But at least we have to reckon with a maximum, or normal growth of the mandible, against an abnormal lack of growth of the maxillary bones. In many such cases, with the eruption of the lower second molars there is a recurrence of the apparent protrusion of the lower anterior teeth, and many operators have been chagrined, thinking that their retention has not held, and that the upper arch has slipped back. This, I think, has not been a true reading of the facts. From a careful study of two cases, each of which has been in my care for five years, I believe that with the eruption of the lower second molars, we have the normal horizontal growth or elongation of the mandible and superimposed arch. Coincidentally we should have an equivalent development of the upper arch, if the newly established normal occlusion is to be maintained. Unfortunately the same mysterious factors which originally caused the bone cells of the maxillæ to build more slowly than those of the mandible are still existent, and therefore the upper arch fails to develop as rapidly as the lower, and we have Class III malocclusion reestablished. Intermaxillary retention, therefore, is obligatory, since it supplies just that mechanical stimulus which will cause a continued forward movement of the upper arch, sufficient to keep the upper teeth in normal occlusal relations with the more rapidly developing lower arch. If the above hypothesis be correct, it follows that retainers and elastic force must be continued until the eruption of the lower third molars. There is, however, one other recourse which I am very desirous of seeing tried. In one case in my practice, where an over-large mandible is a family trait, I would like to have an operation performed, and the unerupted third molars removed, because in this way I believe that we may check the further anterior movement of the teeth in the lower arch.

I would like to make one suggestion to aid Dr. Ottolengui and Dr. Pullen in their "under-bite" discussion. I would suggest the term "occluso-gingival relation of the two planes." Each arch has an occlusal plane, and there is an occluso-gingival relation if I may so term it, and I think that is what Dr. Pullen had reference to.

I would say to Dr. Federspiel that, instead of saying "disuse," he should use the term "abnormal use."

**Dr. Weeks.** My point of view of the treatment and conditions of Class II differs too far from the point of view of the essayist to make it worth while to enter a discussion of a five minute limit. As you all know, I think the position of the condyle in the Glenoid fossa should be considered in the retention of all Class II cases. There is one thing in relation to the over-bite, or the inequality between the distance of eruption of the anterior and posterior teeth, which is a vital factor. I think the inequality between the extent of eruption of the anterior teeth and posterior teeth, and the failure to meet these conditions, has been, in many cases, the factor which has caused the greatest share of difficulty in the retention of the cases, and has been the chief factor in the failures of the treatment in Class II.

**Dr. Pullen.** The discussion of this paper proves that the subject is too broad for any one man to bring out all the points in connection therewith. I take off my hat to any man who is an authority on Class II retention. At the same time, when I was asked to write the paper, I thought I would endeavor to bring out some of the history of Class II retention to date, and some of the general principles involved, expecting that many points of value would be brought out in the discussion.

Referring to the discussions of Doctors Lourie and Dunn, I feel much indebted to them for bringing out those very points which I omitted, especially the point Dr. Lourie made as to the intermaxillary elastics taking the place of the muscular disability.

The superiority of the clamp band over the plain band for molar bands in Class II retention is a point I omitted, but intended to mention in the paper. If the lapping clamp band is used, there is a better chance for the band doing efficient work than if we use one without the lap, because the band and cement completely encircle the tooth, thus affording better protection. The clamp band is also not nearly so liable to become loosened as the plain band.

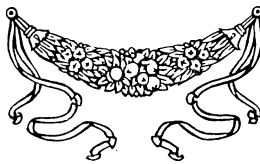
Dr. Louri fastens the end of the lingual arch around the distal angle of the molar band to get rid of the strain, which is a decided advantage.

## ITEMS OF INTEREST

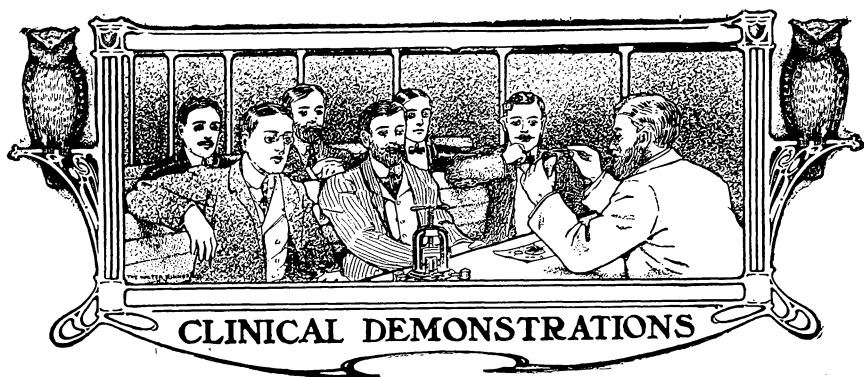
There is a place, however, for the plain band, especially for very young children, where we want to get rid of everything that interferes with the action of the tongue, or of all roughness which may catch particles of food, etc.

I wish to compliment Dr. Dunn on the beautiful result obtained in the case shown. I do not think I have ever produced a similar result and do not know of any similar case that was not retained artificially. I may, as Dr. Bogue says, over-retain my cases, and it is probable that some of our cases might be all safe if we would allow the normal occlusal forces to take care of them after a shorter period of retention, but I have felt the necessity of being on the safe side and have retained Class II cases a long time.

Regarding the questions of Dr. Ottolengui, I was slightly confused because I thought he was springing something in the nature of an ambiguous catch question. I believe, with Dr. Ottolengui, that the infra-occlusion of the bicuspid is in evidence, although I think we may also have some supra-occlusion of the incisors; but I have no doubt that in the majority of Class II cases the greatest trouble is in the infra-occlusion of the bicuspid and molars.







## Clinics Before the New Jersey State Dental Society.

### The Flagg Method of Dental Alloy Making.

Dr. W. H. Crueman,  
Philadelphia, Pa.

The usual method of making alloys of metals differing widely in their fusibility is to first fuse the most refractory, then to add in the order of their infusibility the other components, leaving the most fusible to the last. For commercial use, where exactness of composition is of minor importance, it answers every purpose. In making dental alloy this procedure always resulted in an uncertain loss, sometimes more and sometimes less, and, furthermore, as this loss was not equally distributed among its components, without an analysis, whether or not the composition of the ingot corresponded to the formula was unknown, no two meltings producing the same result.

The late Dr. J. Foster Flagg, during his investigation of the amalgam question, devised and published a more accurate process. He directs to first place in the crucible sufficient borax that when completely fused it will cover and protect from oxidation the fused alloy. While the borax is at a temperature making it as limpid as water, a temperature but slightly below that of fused silver, the mixed components are placed in the crucible; they promptly fuse, and after stirring with a non-metallic rod (clay-pipe stem with the hole plugged with asbestos fibre), are poured into the ingot. This, as a matter of convenience, I have modified, first placing the tin into the fused borax, and show a crucible in which the tin has been fused without the slightest oxidation. The other components are then added, if zinc is used, adding it last and immediately before pouring, as at a high temperature this metal is volatilized. An ingot of alloy was shown that weighed exactly the same as

## ITEMS OF INTEREST

its components, weighed before melting, and the crucible in which the melting was done was perfectly clean after the alloy was poured, proving that there was no oxidation loss during the melting. An ingot mold, the workmanship of Dr. E. Carlton Palmer, of Philadelphia, and a cutting arrangement made by Dr. William H. Trueman were also shown. Used with power on a strong lathe it reduces to shavings ten ounces of alloy in from ten to fifteen minutes. The forms of the shavings depends upon the angle of the cutting edges of the tool and the feed. It is bolted

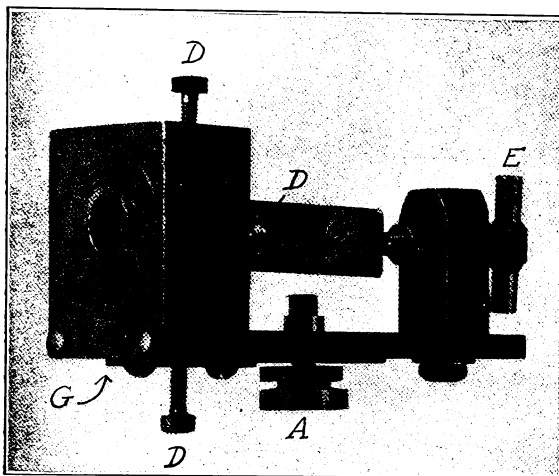


Fig. 1

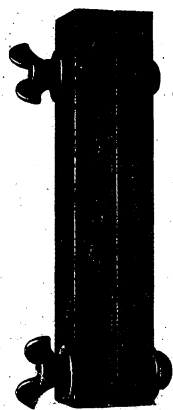


Fig. 2

on to the side-rest of the lathe. The Flagg method has been described as a solution of the more refractory metals in the molten tin. This is practically an error. It consists in protecting the easily oxidizable metal by the borax, so that it may be heated to a high temperature without loss. The credit for this suggestion belongs to Dr. Flagg.

The apparatus (Fig. 1) is secured to the slide-rest of the lathe by the nut and screw *A*, and so adjusted that the rod of alloy held in the lathe-chuck freely enters the opening *B*, where it meets the spear-pointed drill *C*, which passes through a slot in the back of the box *F*, and is held rigid and central to the opening by four screws, three of which are shown, *D*. The screw *E* holds the drill to its work. The cutting is done within the box *F*, the cut alloy escaping through an opening at *G*.

Ingot mold (Fig. 2) for casting a cylindrical rod of dental alloy. Two pieces of two by one-inch iron bar held together by diagonally

placed bolts; a five-eighths-inch hole is drilled diagonally to avoid the bolts, about seven inches deep, into which the alloy is cast. It is massive so as to quickly chill the alloy and prevent segregation.

**The Cast Aluminum Plate.**  
**Robert Seymour, D.D.S.,**  
**Philadelphia, Pa.**

A plaster impression is taken of the case in the usual manner, and if a vacuum chamber or relief is needed it is cut in the impression. This

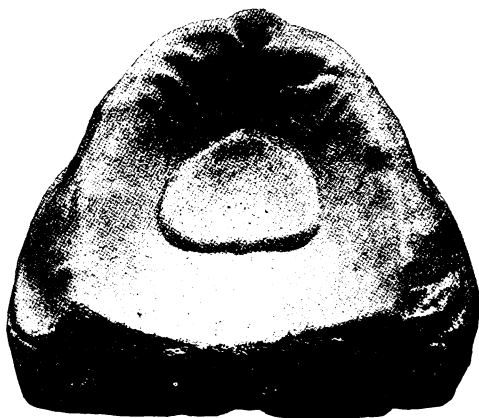


Fig. 1

is then given a thin coat of equal parts shellac and sandrach. When thoroughly dry add an additional coat of sandrach varnish, and when this is quite dry, a cast of silex and plaster, in the proportion of three of the former and one of the latter, is made, always taking the precaution to thoroughly soak the impression in water before running the cast. (Fig. 1.)

The silex which I use for this purpose is a slightly coarser grade than that used for inlay investment. This will give a harder model and still produce a smooth surface in the casting. The plate is now waxed up in the usual way, using tennax wax, as it is thinner than the ordinary base plate.

## ITEMS OF INTEREST

The following additions to the wax will be noted in Fig. 2:

- (a)—Plate spurred or scored.
- (b)—Wax rim inside and out.
- (c)—Gateways.
- (d)—Sprue.

The sprue may be a number 10 wire as shown in Fig. 2, but we prefer a short wax sprue as shown in Fig. 3.

The plate being ready to invest, it is wise to place it in water and allow it to absorb all it will take up. The case is now invested in the

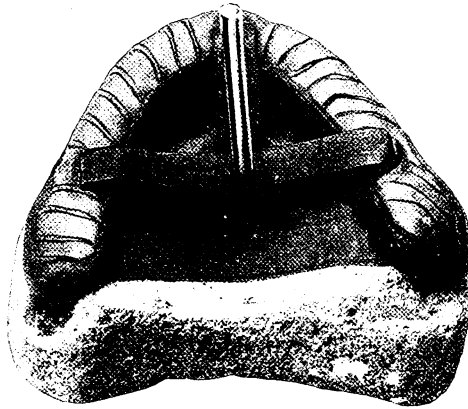


Fig. 2

lower half of flask, the same as an ordinary rubber case, bringing the investment to the edge of the wax. When this is properly trimmed, place a V-shaped groove encircling the model a short distance from the wax. This surface is now given a slight coat of oil and afterwards is brushed lightly over with powdered soapstone; where the rugæ surface has been transferred by means of tin foil, as in the case shown, this tin should also be slightly oiled. The second half of the flask is now placed in position and filled with investment, taking the precaution to shake it well to place. While this is still soft, a recess is cut away in the central opening of the flask, until the short wax sprue is exposed. This forms a crucible, for the subsequent melting of the metal. After the investment has become hard the flask is subjected to dry heat for a few moments and separated; the entire base plate of wax is readily removed and the only portion of

wax left to be burned out is that contained in the gateways and sprue hole. The case is now heated in the furnace, and if any carbon is left on the surface of the model, it can be readily removed with the blow-pipe, as the entire surface is exposed. This is a great advantage over the closed flask method, as it is difficult to burn out such a large quantity of wax, and if this is not done, the resulting cast is a failure. This is true in both systems of casting, where pressure is placed directly against the molten metal, or by the method of creating a vacuum.

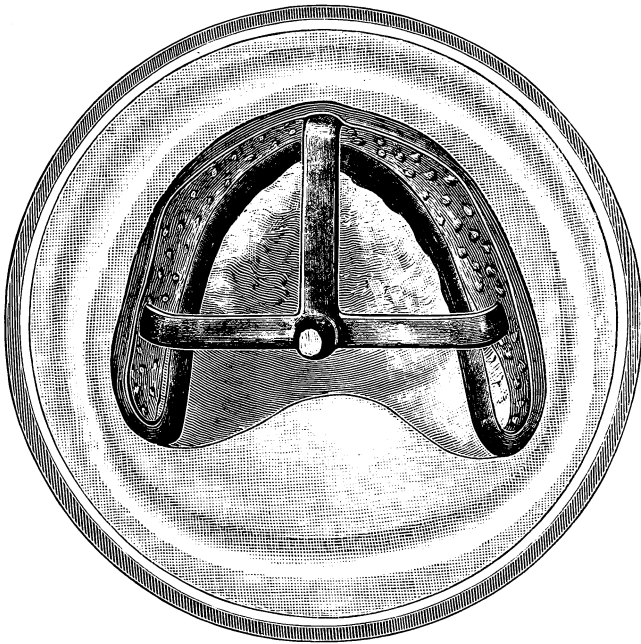


Fig. 3

When the case is hot, the upper part of the flask is again placed in position and it will locate itself by means of the V-shaped depression, which was cut in the first half, as the second half of the flask will have its counterpart. It also forms a guard to prevent escape of the metal from the flask.

Fig. 4 shows a cross section of the case at this stage. The cup is now placed on the base of the machine, and the plunger cap placed firmly

against it for the permanent adjustment of the flask. The metal is now heated in the recess prepared for it, and when thoroughly melted the casting is made by packing moist asbestos fibre in the plunger cap of the machine and bringing it gently, but firmly, against the flask. When the metal is cold, remove and cut away the gateways, leaving a small portion remaining to help retain the rubber. The teeth are attached by means of rubber.

The advantages of this method over the swaged plate are as follows:

1. Better adaptation, especially in undercut cases, as the case is cast direct on the original model.

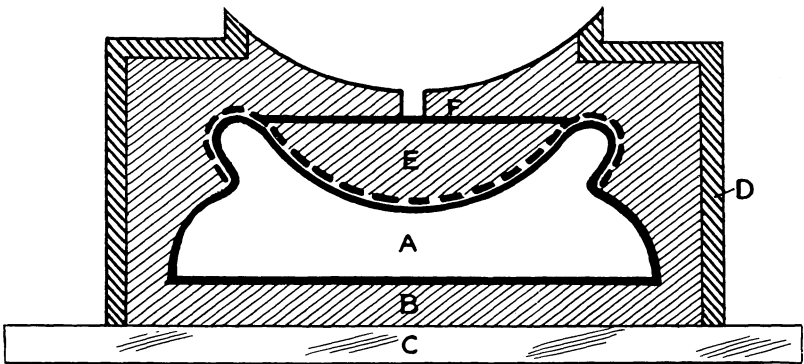


Fig. 4

2. It is stronger, as a rim is carried not only on the outside edge of the plate, but also on the lingual surface a short distance from the teeth. The plate can also be varied in thickness according to the strain.

3. Better anchorage for the teeth.

**Model Free Dental Clinic.**  
**Dr. Thos. E. Weeks,**  
**Philadelphia, Pa.,**  
**and Assistants.**

The Clinic Committee, assisted by Dr. Thomas E. Weeks, of the Philadelphia Dental College, and a number of exhibitors, under the direction of Mr. McMacken, furnished and equipped a room as a "Model" or "Sample" Free Infirmary.

## ITEMS OF INTEREST

To mention the dealers and manufacturers who contributed to the success of this clinic would be unfair, as everyone approached gave freely of furniture, instruments and medicines, as well as service.

The room was tastefully furnished through the untiring efforts of Dr. W. I. Thompson, and equipped with *all* that goes to make up a complete dental office, including one chair and the accessories for operating; and another with all of the necessary appurtenances to make the operation of extracting safe, painless and septic.

This clinic was conducted by instructors and recent alumni of the Philadelphia Dental College, assisted by two thoroughly trained nurses.

The corps consisted of Dr. Thomas E. Weeks, Dr. Alfred M. Haas, Dr. Charles F. Wilbur, Dr. M. L. Hagopian, Dr. Horace Tantum, Dr. Wm. Stanley Carrick; nurses—Miss Anna M. Stanley and Miss Fancourt.

Dr. Jane Bunker, of New York, rendered valuable assistance in teaching and performing Prophylaxis, as did Dr. Wm. T. Wyckoff, of Philadelphia, in extracting teeth under local anæsthetic.

Thanks and appreciation should be given to Dr. Iredell and the members of the Clinic Committee for their interest and efforts to make the Clinic a success.

This Clinic was intended as a sample of how a "Free Dental Clinic should be equipped and conducted," and as a "Bureau of Information" for those who contemplated the establishment of such infirmaries in their district.

To this end the equipment and service was made as complete as possible and provision was made for the giving of information upon all that pertains to an institution of this kind. (All who failed to get such information at the meeting, may obtain the same by addressing Thomas E. Weeks, 1913 Mt. Vernon St., Phila., Pa.)

With the exception of several operations by Dr. Weeks, intended to show how *doubtful* permanent molars, in the mouths of *young* children, may be saved with a minimum of operative procedure, by the use of something like Iodoformogen Cement and Oxyphosphate of Copper, no effort was made to fill teeth.

Some operations for prophylaxis were performed by Dr. Bunker and many extractions were made under local and general anæsthesia by Dr. Wyckoff, Dr. Haas and Dr. Carrick.

A large number of examinations were made; some were assigned to the various Clinicians of the first day, thus proving a valuable feeder to the general Clinic. To *611* information was given regarding the condition of their mouths and teeth, instruction as to treatment and direction for personal care of the mouth and teeth.

## ITEMS OF INTEREST

**Painless Extracting and other  
Painless Operations, with  
Local Anaesthetics.  
Wm. T. Wyckoff, D.D.S.,  
Philadelphia, Pa.**

Dr. William T. Wyckoff, demonstrated the successful use of a local anaesthetic composed of:

- Rx Cocaine Hydrochloride 3 3-5 gr.
- Solution Trinitrin (1%) 10 min.
- Spirit Thymol Comp. 1-4 fluid ounce.
- Distilled Water q. s. ad. 1 fluid ounce.

this being about a 1% solution of cocaine.

This anæsthetic was used in the extraction of more than fifty teeth, for men, women and children of various ages and conditions, with almost universal success and painlessly. One particularly interesting case was that of a man about sixty-eight years of age, who was in such a state of disease as to be entirely helpless, being carried in and out of clinic room, and although his heart and other organs were in a very weakened condition, he submitted to the extraction of seventeen difficult teeth, and when carried out claimed he had not suffered at all, and felt better than when brought into the extracting room.

Other cases were interesting in different ways, and as a whole the clinic was a marked success and a great improvement over those of former years, due in a great measure to the able assistance rendered by Dr. A. M. Haas, of Philadelphia, and the two very efficient trained nurses connected with the model free clinic room, in which this clinic was permitted to be given, under conditions of cleanliness and attention not heretofore possible, with the crude appliances and equipment available in past years.

**Lactic Ferments in the Treatment of  
Pyorrhea and other Lesions of the Mouth.  
Dr. E. H. O'Brian,  
New York, N. Y.**

The lactic ferments have the property of proliferating and growing actively, even when the amount of lactic acid which they produce as a by-product reaches 2 and even 3%, whereas practically none of the bacteria which infest the orifices of the body, and especially those of the mouth, such as the Klebs Loeffler bacillus, the spirillum of Vincent's Angina, and all of the spirochaetas and micro-organisms which infest the mouth of patients suffering from pyorrhea, are able to withstand even small doses of lactic acid.



## ITEMS OF INTEREST

The lactic ferments will proliferate and find a means of continuing their life processes by feeding, as it were, on the exudates produced by irritation of other micro-organisms around the roots of the teeth, so that in a short time, when solutions or suspensions of these lactic ferments are injected into the pockets around loose teeth, they produce *in situ* sufficient lactic acid to arrest further developments of objectionable micro-organisms and resist for some time, at least, themselves.

With regard to the making of the milk cultures for use in injection into the pockets in pyorrhea, etc., or for a mouth wash, while not of absolute importance, in order to get the best results, the cultures should be made with milk that has been separated from the cream in a centrifugal method, using therefore only skimmed milk, with as little fat as possible.

This milk should then be sterilized in an autoclave at a temperature of 120°C. for twenty minutes and the temperature allowed to fall to 55°C., the container all this time being properly kept from contamination by the air, by a plug of cotton, as is used in the method employed by bacteriologists. A quart may be inoculated by one or two or three crushed tablets of Fermenlactyl and then placed in the incubator, with precautions taken so that the temperature will not vary more than a few degrees between 50-55°C.) for from twenty-four to thirty-six hours, the temperature being maintained as stated during the whole of this time. This will insure very rich cultures of the streptococcus and the strepto-bacillus lebeni without any possible contamination of other spore-bearing or other bacteria. It is therefore a pure culture, and such a culture will retain its properties without change for at least seven or eight days if kept in an icebox.

These technical precautions, while not absolutely essential to good dental work, are described simply to show what can be done under the most favorable conditions, but the great predominance of the useful lactic ferments mentioned will prevent proliferation of saprophytic or pathologic micro-organisms to such an extent, that even when the technical details referred to are not strictly observed, such a mouth wash will give first class results.

In order to make this mouth wash of sour milk more easy to handle, the addition of 5 per cent. of sugar of milk and 1 per cent. of tragacanth gum, powdered, will aid in suspending the coagulated casein and make it more palatable and agreeable for patients' use. This is very easy to obtain and it will suffice to add to the finished product by agitating immediately. Close the recipient and when about to be used, agitate again before using.

At the New York Hospital, House of Relief branch, a preparation of

## ITEMS OF INTEREST

this kind is being used under the name of "injection viridi," so that patients may not know exactly what they are using. It is called "injection viridi" because a trace of vegetable chlorophyll is added to give it a pale green color.

During the treatment locally, as shown in my clinic at Asbury Park, I also put the patient on a diet of buttermilk, thus cleansing the stomach and intestinal tract of all fermentative agents. For much clinical data as to the action of these ferments, I am indebted to Dr. Frederick Mason. An exhaustive article could be written, but as this is to serve as a description of a clinic, I will close by answering a few of the questions asked me.

*What is the use of lactic ferments in gouty diathesis?* Gouty manifestations are symptoms of faulty metabolism. Lactic ferments are beneficial in such cases inasmuch as they diminish faulty digestive processes; they prevent formation of endotoxines, diminish the indican output which irritate the kidney, skin and liver and give rise to the deposits within the tissues which give rise to gouty symptoms. Lactic ferments are, therefore, favorable to such cases and cannot do harm.

*What is the effect in diabetes?* While claims have been made in their favor, they have not been proved, and the matter is still under discussion. Lactic ferments cannot harm diabetics in any case. The fact that the lactic acid produced within the intestine is dissipated almost immediately as water and carbonic acid, and instead of rendering the urine more acid, as do inorganic acids, it renders it more alkaline, *i.e.* less acid, as is well known, is favorable to diabetics.

*What is the effect in anæmia?* In my opinion, lactic ferments would not affect anæmic patients in any way, favorably or otherwise. The cause of the anæmia must be sought and treated accordingly, and the lactic ferment therapy need not be suspended of necessity; in fact, anæmia, in many cases, is due to forms of indigestion. When the anæmia is due to gastro-intestinal sepsis (indigestion with formation of foul-smelling gases, etc.), lactic ferments with phenol-phthaleine, would be distinctly indicated. All depends on the cause of the anæmia or choro-anæmia.

### **Silicate Cement with Reinforcement. Dr. H. McAlpin, Bradford, Pa.**

Some half a dozen patients presented for this clinic, which was a demonstration of Schoendeck's silicate cement, with anchor screw reinforcement. One had a right upper central incisor with a large cavity in the morsal surface midway one-fourth of the tooth. This was restored by the use of two screws, and the cement, when completed, was imperceptible at "speaking distance."

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A second case was a left upper central incisor from which the mesial incisal corner had been broken. This was restored by the use of two anchor screws, inserted at a safe distance from the living pulp, and the cement built around them.

Another was a left, upper lateral root, from which the crown had practically decayed and the pulp receded. Four screws were inserted in this root and the entire crown restored by imbedding the screws and contouring. The speed with which this operation was performed, and the becoming appearance of the tooth afterward, occasioned favorable comment from those who saw it. It was, however, not intended as an example to be followed, but rather to demonstrate the possibilities of the material.

### **Simple Orthodontia, Showing Models and Actual Appliances Used.**

**Dr. H. E. Fitch,  
Elmira, N. Y.**

In clinics on this subject it has always been my practice to show the more simple cases, the method of treatment and the results obtained, and to endeavor to get the young practitioner to take up with his general practice this much neglected branch of our profession, for on every hand we see this work neglected when, with very little effort at the proper time in life, irregularities could be corrected.

The young practitioner can, in my opinion, in no way more rapidly establish himself in the community, and at the same time surround himself with a clientele of the best people in the place, than by practicing simple orthodontia (more complicated cases will surely follow), and the care of children's teeth, and be known as "The Child's Dentist."

**Case I.** Miss C., age 19 years. Upper central incisors closing on the lingual surface of the lower incisors. The upper incisors were each banded and the bands soldered together. Across the labial surface, or face of these bands was soldered a heavy bar which extended out over the labial surface of the lateral incisors. Through each end of this bar, over the face of the lateral incisors, was drilled a hole which was tapped to take a screw made of 16-gauge wire. The end of this screw would pass through the bar and engage the labial surface of the lateral incisors. This screw was only allowed to extend out against the lip one-sixteenth of an inch. As case progressed, longer screws were used. Normal occlusion secured in thirteen days.

**Case II.** Miss D., 23 years. Upper left cuspid inlocked so badly as to appear absent. Same method employed, with bar and screws resting on lateral and first bicuspid. Case completed in 21 days.

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A number of other cases of similar nature were shown, where force was applied in this manner. The advantage is, first, all of appliance is on labial aspect of teeth, with the exception of the band and does not cause any unnecessary discomfort to the patient; second, the rapidity with which the results may be produced consequent upon the force secured in exact direction of line of movement desired.

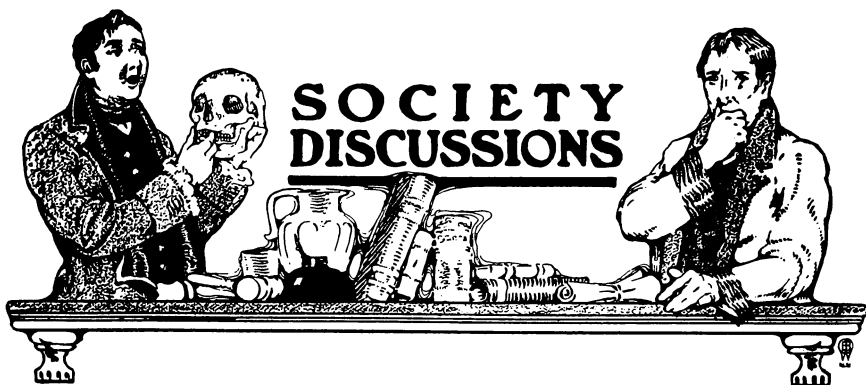
I was very much gratified at the attention given my clinic at the Asbury Park meeting of the New Jersey State Society, as I have observed that, at the various conventions very few dentists appear interested in orthodontia and I had close attention of from five to fifteen men at my table from two to five o'clock.

**A Method of Filling Sensitive Cavities with Silicate Cement.  
Building up Corner and Tips with Silicate Cement.  
Dr. Fred. B. Hicks,  
Brookline, Mass.**

A few years ago I had a patient with a labial cavity that I wished to fill with artificial enamel. The dentin was so sensitive and hard that it was impossible to get any undercuts without causing severe pain. I mixed a little slow-setting cement very thin, lined the cavity with it, then pressed the soft enamel upon it; after letting this set a while, I finished it and covered with sandarac varnish. I found this worked so well, and the fillings retained the shade so nicely that I gradually adopted this method of inserting all my enamel fillings, building up corners and whole facings of teeth.

**A New Silicate Cement Called  
"Phenakit" for Restoring Decayed Teeth.  
Especially Recommended for Front Teeth.  
Dr. C. F. C. Mehlig,  
New York, N. Y.**

This cement I have used since September, 1909. It differs from and is superior to any other silicate cement which I have used, *viz.*, in color, translucency, density, adhesiveness and slow-setting quality, which is so essential for proper introduction into a cavity, to get the best results. I have not noticed any change, either in color or disintegration. The edges have remained perfect during this time.



## **New Jersey State Dental Society.**

### **Thursday Evening Session.**

President Dilts called the meeting to order, and a quorum being present the roll call was dispensed with.

Dr. Charles A. Meeker then read the annual report of the State Board of Registration and Examination in Dentistry.

On motion the report was received and discussion postponed until the next session.

On motion of Dr. Stockton a vote of thanks was extended to Mr. Parsons, of the Brunswick Hotel, for the use of the assembly room of that hotel, and the Treasurer was instructed to pay ten dollars to Mr. Parsons to distribute amongst the extra help required to make the room available.

Dr. Irwin, chairman of the committee on the President's address, presented the following report:

### **Report of Committee on President's Address.**

The Committee upon the President's Address would advise the adoption of the following recommendations:

FIRST. That free public dental clinics be established in all the cities of the state as speedily as possible.

SECOND. That the faithful following up of the work already started in some cities by inaugurating free dental clinics be pushed with vigor and the appointment of paid city dentists be demanded the same as city physicians are appointed.

THIRD. That a resolution of "Approbation" be passed and transmitted to Mr. Forsyth, of Boston, for his work promoting the Forsyth Foundation.

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FOURTH. While the time is not now opportune for the adoption of the M.D. degree in our state dental law as a requisite for the practice of dentistry, yet we would urge that the profession and the public should be educated to expect it.

FIFTH. That the Society should appropriate \$500.00 for the use of the State Board in conducting prosecutions of violators of the state dental law.

SIXTH. That the preliminary educational requirements from candidates for a license to practice dentistry be raised to a full four years approved high school course or its equivalent, and this be incorporated in our State Dental Law in section three instead of the words: "that furnished by the common schools of the state."

SEVENTH. That the part of section three known as the five years practitioner's clause be stricken from our laws and all candidates for a license be required to possess a dental degree.

EIGHTH. That a plan of re-organization be drafted which is adapted to the needs of the dentists of this state, which will include all the members of local societies as members of the state society.

NINTH. That the Fund for Aged and Indigent Dentists, members of this state society be increased by annual dues of \$1.00 additional per member, and that liberal contributions be solicited for this fund.

TENTH. That the Executive Committee be requested to secure some place of meeting hereafter, other than Asbury Park, unless the authorities of this city can positively offer a more suitable place.

Committee on President's Address,  
ALPHONSO IRWIN,  
H. L. BEEMER,  
WM. H. PRUDEN,  
W. W. HAWKE,  
D. C. BAKER.

On motion the above report was received and the discussion thereof postponed until the next session.

**President Dilts.** Dr. Hawke will now introduce to you the essayist of the evening.

**Dr. Hawke.** I take great pleasure in saying that we will have with us to-night Dr. B. J. Cigrand, of Chicago, Ill., who will give an illustrated lantern lecture upon, "What Dentists Have Done for Other Professions."

Dr. Cigrand is President of the Chicago Public Library; he is also on the literary staff of the Chicago *Tribune*, and Professor of Medical

Literature in Chicago, Ill. He is also Dean of the Dental Department of Chicago, Ill.

Dr. Cigrand will give a talk which is not a dental lecture, although it is given by a dentist. We are very fortunate in having him with us, for he has come here under almost impossible conditions, which he will probably tell you about. There was a strike on the railroad, the passengers were turned out of the trains, and many difficulties were encountered, all of which, however, he successfully overcame, and he is here, and we are all to be congratulated.

I take great pleasure in introducing B. J. Cigrand, M.D., D.D.S., of Chicago, Ill.

(Dr. Cigrand then delivered his most entertaining lecture, which has been already published in the *Dental Review*, September, 1910.)

On motion a vote of thanks was extended to Dr. Cigrand for his very excellent address.

On motion, duly seconded, and by the affirmative vote of all members present, Dr. Cigrand was unanimously elected an honorary member of the New Jersey State Dental Society.

Adjourned until Friday, July 22nd, 1910, at ten o'clock A. M.

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### **Friday Morning Session.**

President Dilts called the meeting to order.

A quorum being present the roll call was dispensed with.

On motion of Dr. Meeker the report of the Committee on President's Address was adopted as read.

On motion of Dr. Morrison the report of the State Board of Examination and Registry in Dentistry was adopted as read.

The President appointed the following Auditing Committee: Drs. Crater, Pruden, and Stevens.

Dr. Kussy then presented the following report of the Committee Materia Medica:

### **Report of Committee on Materia Medica.**

**Antiseptics.** Your Committee on Materia Medica beg leave to report as follows: The most popular active ingredients of all antiseptic mouth washes and medicaments for dental and oral purposes continue as heretofore to be thymol, eucalyptol, menthol, baptisia, methyl salicylat, benzoic and boric acids, formalin and hydronaphthol. All the well known drug houses have on the market elegant preparations containing these well-known agents in combination;

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but we would respectfully recommend that when such a combination is desired that the attending dentist or oral surgeon prescribe the liquor antisepticus alkalinus (National Formulary). This can be obtained at any pharmacy in any desired quantity. It is almost a fac-simile of the preparation known as Glyco-Thymoline. Lysol may also be obtained at a nominal cost, and in what we consider a more ethical atmosphere by prescribing liquid cresolis compound, U. S. P. It is composed of cresol, 500 gms.; linseed oil, 350 gms.; potass. hydrox, 80 gms.; and water, q. s. to make 1,000 gms. Hydronapthol, though infrequently used of late, has proved in our experience a most efficacious antiseptic, possessing a penetrating and stimulating power not possessed by other medicaments of this class. It is the most active constituent of the preparation known as Hy-Nap and of the mouth wash known as Salugen (formula of Dr. Hector Griswold).

The proprietary preparation, Vernas Lotion is an effective wash for certain conditions where potassium chlorate and zinc chloride are indicated as is also Lavis. As to hydrogen peroxide, we would urge upon the profession the importance of using only such preparation as conforms to pharmacopœial tests and requirements, as much of the efficacy is lost by a diminution in the volume of oxygen, or excess of acid contained therein, found in many of the cheaper preparations on the market. As a local dressing after extractions to prevent infection and to be used on tampons, we have a new antiseptic and germicidal powder, known as formidine. Chemically it is methylen disalicylic acid iodide.

We take the liberty at this time, before this **Local Anaesthetics.** representative body, of boldly protesting against the use of cocaine for local anæsthesia, claiming it to be a most dangerous drug at all times and especially when used indiscreetly. It is capable of producing a local hyperæmia and subsequent necrosis in small doses, and, as is well known to you all, serious toxic effects in large doses. In a recent compilation by Dr. John D. Thomas, of Philadelphia, we find an alarming array of statistics bearing on this point. No less an authority than the late Prof. H. C. Wood, professor of materia medica and therapeutics at the University of Pennsylvania, is quoted as absolutely opposed to the use of cocaine in hypodermic injections.

We beg leave to remind you of the following effects of cocaine anæsthesia: Paralysis of nerves, and the action of the drug is directly on the circulation, the paralysis ending frequently in sloughing of the gingivæ and necrosis of the adjacent alveolus, and most important the temporary, and in some cases, permanent cutting off of nutrition to the parts affected by the anæsthesia.



If a drug similar in its anæsthetic effects is desired, we would strongly advise the use of either beta-eucaine or novocaine, as a 2% solution in water, or in combination with other drugs, such as adrenalin.

These drugs, although equally as effective so far as anæsthesia is concerned, are only about one-fourth as toxic, and possess a great advantage over cocaine in that their solutions may be repeatedly sterilized by boiling without causing any chemical decomposition.

Dentalone is an analgesic intended particularly for the relief of odontalgia. It is a saturated solution of chloretone in the essential oils of cloves, gaultheria and cassia.

**New Remedies.**

For the internal treatment of pyorrhea in cases where the uric acid diathesis is apparent, a seemingly valuable new remedy is Squibb's Antilitic, a combination consisting of sodium phosphate, 10 grs.; sodium benzoate, 2 grs.; sodium salicylate, 2 grs.; in each dose. In this same class are Sal Hepatica, Salvitæ and Hexamine. Hexamine is hexymethyl tetramine, a Carlsbad salt preparation, which is split up molecularly, when taken into the system, forming nascent formaldehyde, thus sterilizing the alimentary tract and eradicating existing toxins.

JOSEPH KUSSY, P.H.G., D.D.S., Chairman.

CHARLES S. STOCKTON, D.D.S.,

ROBERT ROESSLER, M.D., D.D.S.

### Discussion of Materia Medica Report.

**Dr. Slade.**

The Committee on Materia Medica has spoken of the use of cocaine, and I remember the time when Esterbrook travelled around the country with his local anæsthesia and left an array of sloughing gums in his train. Since then I have been practicing dentistry for about ten years, and during all that time have used cocaine in some form, and I cannot subscribe to the report of the committee as to the dangers of cocaine; not that it does not have its dangers just as strychnine does. Considering the way so many injections of various drugs are made, there is no wonder there occurs sloughing of gums, but I have not been convinced of the danger of cocaine, in a rational dose. When you undertake to do the impossible with it you will get in trouble, as you will with any other medicine, and no doubt there are patients who are idiosyncratic against the use of cocaine.

One of the things medical men have always said, and which our own teachers say, is that we should know enough of materia medica to pre-

## ITEMS OF INTEREST

scribe our own remedial agents, without accepting proprietary preparations, which may or may not be what they pretend to be.

I desire to thank Dr. Kussy for his report which  
**Dr. Meeker.** is one of the most concise I have ever heard, and evidently comes from a man who understands chemistry and pharmacy, and I am glad he has sounded a warning as to the use of cocaine, because the idiosyncrasy which Dr. Slade speaks of undoubtedly exists.

A few years ago we passed a resolution that we would not recognize a dental remedy unless the formulæ were given. That, however, has not been strictly lived up to, and I have seen recommendations by members of the Society in the public press and in circulars, of remedies, the formulæ of which were not given by the manufacturers. That is entirely wrong, and I think we should adhere to our former resolution.

There are many proprietary remedies of which we do not know the contents, excepting those perhaps of Dr. J. P. Buckley, and I think we are doing wrong in using them or recommending them to our patients.

We shall not be ashamed to have Dr. Kussy's report printed in our proceedings, and I again thank him for it.

I listened to the report with considerable interest,  
**Dr. Truex.** and have nothing particular to say except in commendation of it. The consideration which the Chairman has given to the subject is quite manifest.

I am not in sympathy with the use of proprietary preparations, and believe that there is a lack of knowledge generally existing among us upon the subject of materia medica, and kindred work along that line, and I believe it is time that matter should be given more consideration by the colleges.

I approve of the use of cocaine as a local anæsthetic, but, of course, only with a thorough knowledge of the dose and toxic effect.

Dr. Truex can tell us of some of the answers  
**Dr. Meeker.** on the subject of materia medica in the State Board of Examination, and I wish he would do so if it is only to sound a note of warning.

I wish I had with me some of the answers so  
**Dr. Truex.** that I would not be talking entirely from memory, which I hardly like to do, on a subject which is so important. However, there are one or two answers I can remember, because they impressed themselves so strongly upon my mind. One question was as to a heart stimulant, and one of the applicants said he would administer for that purpose from one half to one drachm of tincture of aconite (laughter); and another gave as properly used for an emetic,

## SOCIETY DISCUSSIONS

corrosive sublimate (renewed laughter), and it is not an unusual thing for me to learn from the applicants that a maximum dose of hydro chlorate of cocaine is from five to fifteen grains.

One thing is impressed upon my mind, and it is this, that if we are to use hydro chlorate of cocaine, we should not only know what is a maximum dose, but also what per cent. solution we are using, and the number of minims of that solution that will produce, when injected, the maximum does. Not once in fifty times do I receive answers which convince me that the student understands how many minims of a stated solution will produce the maximum dose. This has become so pronounced, that I have about decided to make a rule at the next examination, that if the applicant does not answer two questions, one bearing on the other, in such a way as to prove that he intelligently could tell from the solution the number of minims that would produce a maximum dose, I shall mark both questions against him.

I thank you for the discussion which the report has brought out.

**Dr. Kussy.**

One of the speakers alluded to the fact that the medical profession in convention tabooed all proprietary preparations. This, to me, is a somewhat doubtful statement. I personally can name fifty ethical practitioners of medicine who prescribe as many remedies that are entirely proprietary, and which they prescribe on account of their merits. There is a large number of proprietary preparations made solely for the use of the medical profession, as those preparations I have mentioned are made for the use of the dental profession, but we have been careful in our report to mention only those preparations of which the formulæ are published.

As to the use and abuse of cocaine, one of the speakers spoke of an idiosyncrasy which exists, causing grave danger in its use, and I see no reason why we should take the chance of this idiosyncrasy, when we can get the same anæsthetic effect by the use of other preparations.

(On motion the report of the Committee on Materia Medica was adopted and ordered printed in the proceedings.)

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Dr. William I. Thompson presented the following report of the Clinic Committee:

### **Report of Clinic Committee.**

Your Clinic Committee takes this opportunity to report that it has presented before your Society this year between fifty and sixty instructive and very interesting clinics. Speaking collectively of these



## ITEMS OF INTEREST

clinics the Committee is satisfied, and we feel that those who have attended have been benefited by the many ideas presented for their consideration.

We have presented one clinic, which I wish to mention more particularly; I refer to the free dental clinic, held in a separate room in the Casino, conducted by Dr. Thomas E. Weeks, professor of clinical dentistry in the Philadelphia Dental College. Owing to the interest manifested throughout the country in free dental clinics for the poor and dental education for the public, your committee has this year felt justified in going to a considerable expense to establish a free dental clinic in full operation, open to the public as patients, and to the profession as practitioners, under the supervision of Dr. Weeks, with a staff of assistants, nurses and a secretary. We have been amply repaid through the interest shown by the public and the dental profession, and consider the experiment a success. We wish, at this time, to thank those who have assisted Dr. Weeks in bringing his plans to a successful consummation. The Clinic Committee feels that an unusual interest has been manifested in the clinics this year, and we believe it due, at least partially, to the fact that we have given two days to clinics this year instead of one, as in former years, holding the chair clinics on one day and the table clinics the next. This idea has our hearty endorsement.

Your Clinic Committee has two recommendations to offer for your consideration. We recommend a vote of thanks from the Society to Dr. Weeks for the able manner in which he has conducted the free clinic, and we recommend the permanent adoption of the plan of holding the chair clinics on one day and the table clinics on the next.

We ask your indulgence for this somewhat lengthy report, but we earnestly feel that the clinics should rank high in importance in a dental society meeting, and we have used our efforts to make them worthy of your interest.

In closing, your Committee extends its thanks to those who have assisted it.

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On motion the above report was received and the recommendations therein contained adopted, and the thanks of the Society extended to the Committee for its excellent work.

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Dr. Naylor presented the following verbal report of the Exhibit Committee:

The result of the work of this Committee is shown in the Casino;

## SOCIETY DISCUSSIONS

I think the exhibitors are extremely well pleased and the general sentiment seems to be that they wish to come to Asbury Park again if proper accommodations can be secured.

President Dilts called for the report of the Committee on Arts and Inventions.

The Secretary stated that he had received a letter from the chairman of that committee saying he had been unable to do anything, and moved that this be received as the report of the committee.

The above motion was duly seconded and adopted.

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President Dilts then introduced Dr. William Gray Schaufler, of Lakewood, N. J., Vice President of the State Board of Education, who delivered the following address:

### **Address by William Gray Schaufler, M.D.**

#### **Dental Inspection of School Children.**

I do not want to take up much of your time this morning, but your colleague, Dr. Hawke, who was with me on the State Board of Education, asked me to place before you in a few words the important work we are trying to do in the way of compulsory examinations of school children in this State.

New Jersey is the first English-speaking state or community of the world that has practically compulsory medical inspection or examination of school children. England has had medical inspection for eighteen months, and Massachusetts for about two years, but in neither of them is there a penalty attached to the law. New Jersey was long before them in having medical inspection of schools, but it was not obligatory until two years ago last winter, when a law was passed making it compulsory in all communities.

During the first year of this work, ending June 1st of this year, the Medical Inspection Committee of the State Board of Education, of which I happen to be the chairman, felt that we should go very slowly and not force the matter. Many communities had made no provision for funds to pay the medical inspector, and while a good many of the districts in the State were lax in this way, all had shown more or less interest in the matter. From next September, on, we expect that every school district in the State will have a properly appointed medical inspector, whose duty it will be to see every school child once during the school year, and examine for defects, and during the rest of the year care will be taken to see that the advice of this inspector is followed.

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The part which interests you most, of course, is the examination of the mouths and teeth of these children, and if I can interest you sufficiently to get your co-operation in this very important work, I am sure the few minutes I spend here will be very well repaid.

Dr. Hawke will pass around a little printed paper containing the rules relating to medical inspection, as amended by the State Board of Education, June 14th, 1910, and I shall be very glad if every gentleman here will see that he gets one of them and will study it. Among the rules which are obligatory upon the physicians appointed as medical inspectors there is one that refers to your specialty.

I refer to Section 4, sub-division d. "Teeth, condition and care." The rule says:

"At the commencement of each school year the medical inspector shall arrange to make a systematic examination of each school child in his district. This shall comprise a thorough examination of," and then it goes on to designate the eyes, ears, throat, teeth, etc.

By "thorough examination" is meant that the examining physician shall look into the matter and advise—not advise the parent what should be done, but simply seeing a wrong pathological condition of the child's mouth, he shall, on a card, report to that child's parents that the child needs the attention of the dentist, in that way directly referring the child to one of you gentlemen.

As we know, in our branch of the profession, it is very easy to advise as to what shall be done about the children, and a most difficult matter to get the parents, especially those who are poor and ignorant, to do what is necessary. The medical inspector's part will be to refer the children in the care of their teeth to the family, and through the family to the dentist, and then comes the part where we ask your help.

There are a great many of the school children whose parents cannot afford to have the proper work done at the proper time, and at the regular rates which you gentlemen should receive for this work. A great many men in the State, probably many of you gentlemen here, have already offered their services in the way of free dental clinics. That is a most laudable proposition, and if any of you can see your way clear to help the local school board, and the local medical inspectors by (at a certain time in the week or month) seeing children who would be referred to you for this purpose, it would help this work along very much. In some places that is impossible, and the work must be done in some other way, but I think a word from the State Board of Education concerning our difficulties, to you, will certainly be of aid, and what we say to you is this, "Will you be good enough, for your sake, and the sake of the community and the school children, to do all you can to help the medical



## SOCIETY DISCUSSIONS

inspector of the School Board of your district, in trying to get hold of the children, and make it possible for them to have a proper condition of their teeth and mouths?" (Loud applause.)

It naturally occurs to me somebody might be accused of "butting in," as they say. If I should offer myself, and say I would help your inspector, some other dentist might make that criticism.

If you "butt in" free, no one could say anything; if you make a charge, it might be different, but if any one dentist in a place offers to do the work at a reduced price, that is his business and he may do so, and it is something which any one who understands the matter will approve of immediately. I do not think there is any more reason why it should be called "butting in," on the part of the dentist, than it is "butting in" of any one else who offers to do anything for the community free of charge.

I would like to ask Dr. Schaufler whether he considers the medical inspection sufficient, and if he thinks that will be satisfactory. Will it be thorough enough so that you will be satisfied with the examination.

You mean the present examination by the medical inspectors?

Yes.

Not at all; but we have to be satisfied with it. There is a great deal of opposition even to this cursory inspection, but we find the only way to overcome that is to make it just as little as is necessary to find out where the trouble is, in the hope that as the work goes on we can get a great deal more. Asbury Park, Long Branch, Camden, Plainfield, and many other places in this State, have for many years had a compulsory medical inspection, and the subject has been worked out very satisfactorily here in New Jersey. In all places where it has been tried for a year or two the whole community is absolutely with the medical inspection, and in those places much more can be done. But in the small communities we have to overcome, first, the obstruction of the parents and, secondly, I am sorry to say, the enmity of a good many of the medical profession. We have to be satisfied with slow progress and these rules show the minimum, that is, the State Board of Education has cut them down to the lowest possible necessity, in the hope that communities themselves will add to them.

(A member inquired if the work of the medical inspector was gratuitous, and if not what the compensation would be.)

## ITEMS OF INTEREST

The communities are compelled by law to pay  
**Dr. Schaufler.** for the inspection. Unfortunately that is where the great difficulty comes; most communities are unwilling to pay anywhere near the amount which the medical inspectors should receive. I think possibly the average in the smaller communities, outside of the rural districts, is from two hundred to two hundred and fifty dollars a year, for this work of medical inspection. In the lower part of the State, in Burlington and some other counties, they have been trying to get the work done at almost impossible prices; in some school districts they pay so much per child, and in one place they have it down as low as twenty-seven cents per child per year, which is absolutely absurd. The trouble is that communities do not realize that by paying a little more to the inspectors they will save a great many school days for the children, and prevent epidemics and other evils; that the two hundred and fifty dollars which they pay a medical inspector may save them two or three thousand dollars, but the medical inspectors are all underpaid except, perhaps, in some of the larger cities. None of the medical inspection is done gratuitously; the law makes it obligatory upon the district to pay the physician. Of course if the medical inspector desires to turn over his pay for the purpose of employing a school nurse or something of that kind, he is free to do that.

What has become of the dental inspectors already appointed by the Board of Education under salary; will they be eliminated?  
**Dr. Hague.**

The medical inspector has no right at all to treat the patient, as you will see by reading the little leaflet. The rule is laid down that the medical inspector may under no circumstances treat the patient for anything, unless he already happens to be the medical attendant of that household. Dental inspection is something entirely different, and communities so enlightened that they already have that are to be most highly commended and should be encouraged to pay the dentists all they can.  
**Dr. Schaufler.**

I desire to compliment Dr. Schaufler upon the tact and diplomacy with which he has stated the situation, and I think New Jersey is in the hands of a safe man because he has spoken this morning from the standpoint of the public.  
**Dr. Flannagan.**

This question of law coming into a special calling is rather serious, while it is also sometimes beneficial, yet it has its limits, and it is also bound to have its dangers. All law, in order to be good law, should be for the benefit of the public; no special calling has a right, according to



the tenets of the English law, or any other system of law in our day, to demand special legislation which shall especially benefit it, and have the public pay for it. The taxpayer is paying for this, and he has a perfect right to be heard on the subject.

As I view the matter, it seems to me much good can be done by enlisting the services of the women. In every community there are various societies, many of them of a historical nature, and many of a fraternal nature, where women come together and are interested in certain things for the general welfare and the amelioration of the conditions of the poor. Such women can do much to help along this cause. There are also educational and other societies, such as the Young Men's and Young Women's Christian Associations, and others who can do wonders in this direction, in the way no special profession or calling can, if financially interested in the matter.

As to medical inspection, it matters little whether it has a dental aspect attached to it or is carried on by a physician without a dental inspector, for it makes no difference who first calls attention to the fact of the existence of the conditions in the mouth, and the community is taught that health depends to a certain extent not alone on the system in general, but on certain conditions of the mouth. I believe some harm is being done by dentists demanding that there shall be dental inspection in connection with medical inspectors. The taxpayers have to pay for this, and they must be satisfied. Let us take a quarter of a loaf rather than get nothing.

A great deal is coming in the future, and far more than we can realize, and I desire to say now, as I said yesterday, although it may not be exactly germane to the subject this morning, that we collectively, as a profession, must do something along the lines of delivering back to the people something which we will not call charity, but which we will call services, and we must remember that a profession is judged not infrequently by the acts of one or more individuals who can make or unmake a great movement. Take the question of materia medica. We as a calling have been negligent of one great truth, and that is that it seems to me that in the eyes of other professions and of educated and thinking people dentists are relying too much on the thousand and one nostrums that are foisted on the public to prevent certain conditions which we call pathological, in the mouth. That is a curse that has come into our profession, and I saw amongst the exhibits, conditions which I do not think are conducive to the advancement of our profession, and we are being condemned for those things. Medicine has been cursed by it, but that is being eliminated to a great extent by the American Medical Association. You show me an organized body of twenty or twenty five thousand dentists, educated to

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the proper conception of ethics, and I will show you a result that will bring forth the idea that a profession is not a profession and cannot be a profession which gives forth to the public so many of these preparations that are simply dependent upon the say-so of the individual that makes them.

If we are a profession, then we must live up to professional ideals and demand that our teachers live up to them. What would you think of any profession where many of the professors and teachers sign testimonials of the great benefit of Dr. Smith's cure, or of Dr. Jones's preventive? One of the most renowned dentists signed a testimonial of that kind and immediately the maker sent out thousands of blotters with that noted professor and teacher's name on them recommending the preparation. That is something which should not be.

I trust the time will arrive when we will be able to receive appropriate fees for advice and similar services, when dentists will know something of their own materia medica, of chemistry, pathology and therapeutics, and will be able to write an intelligent prescription.

Dr. J. P. Buckley, of Chicago, has given to the world a series of scientific ethical preparations that any one may have his druggist prepare or make himself, and in that way great benefit has come to the profession. (Applause.)

On motion of Dr. Hawke a vote of thanks was extended to Dr. Schaufler.





### Army Dental Corps.

With the convening of the approaching short session of Congress, it would be well for the dental profession to make a strenuous effort toward passing a bill to establish a proper officered dental corps in the Army. No doubt, many, through ignorance of facts, deem it, perhaps, audacious for dentists to ask for rank at all. To such the following table, showing rank, and number in each grade, of the various professions in the Army, will prove enlightening:

	Brig.-Gen.	Col.	Lt. Col.	Maj.	Capt.	1st Lt.
Law—Judge Advocate-Generals .....	I	2	3	6	0	0
Medicine—Medical Corps.....	I	15	21	102	119	166
Med. Reserve Corps.....	0	0	0	0	0	170
Church—Chaplains .....	0	0	0	10	28	27
Teachers—Professors (M. A.).....	0	5	3	0	0	0
Bankers—Pay Department.....	I	3	4	20	25	0
Business—Quartermasters .....	I	6	9	20	60	0
Subsistence.....	I	3	4	9	27	0

Thus we find that practically all the professions serving our army, except dentistry, are dignified with high rank. The experimental Contract

## ITEMS OF INTEREST

Dental Corps, after years of loyal duty, having proven the importance and advantage of dental service, the War Department finally indorsed a bill giving rank to the army dentists. But what rank. That of First Lieutenant, and even these are to rank below the 170 First Lieutenants in the Medical Reserve Corps. Thus the best that the dentist is to receive is five grades lower than the doctors, the lawyers, the bankers and the other business men in the Army; four grades lower than the teachers and two grades lower than the church.

The following is quoted from the last report of the Surgeon-General:

**Surgeon-  
General's  
Report.**

"Attention is invited to my report of last year with reference to the inadequacy of the number of dental surgeons now authorized by law if a serious attempt is to be made to furnish dental service for the army.

"Since the employment of dentists was authorized in the act of February 2, 1901, numerous bills have been introduced in Congress looking to the permanent organization of a dental Corps of the Army, giving the members of this corps various grades of rank. All bills introduced to date have been objectionable in one respect or another. During the past winter this office was called upon to give an opinion as to the needs of the Army with reference to a permanent dental organization. Before giving an opinion on the subject, all the claims and recommendations that had been made to date for the improvement of the dental service were taken into consideration, and it is believed the bill proposed by this office for the commissioning of dental surgeons will meet the requirements in every respect and give to the army an efficient dental service.

"The bill submitted recommends that there shall be attached to the Medical Department a dental corps, which shall be composed of dental surgeons and acting dental surgeons that the original appointments to the dental corps shall have the same official status, pay, and allowance as the dental surgeons now authorized by law, and that, after three years, each acting dental surgeon shall be eligible to appointment in the regular dental corps, after passing, in a satisfactory manner, an examination prescribed by the Surgeon-General of the Army. After passing this examination, an acting dental surgeon is commissioned in the dental corps with the grade of First Lieutenant, and shall have rank immediately below all officers of the Medical Reserve Corps, and the pay and allowances of dental surgeons shall be the same as those of First Lieutenants, not mounted, including the right to retirement on account of age and disability; and the time served as dental surgeons, acting dental surgeons,



or contract dental surgeons shall be reckoned in computing the increase service pay of such as are commissioned in the regular dental Corps. The recommendation also limits the number of dental surgeons to 60.

"The bill proposed by this office was accepted by the representative of the National Dental Association, and, at the time it was recommended to the Secretary of War, the then Surgeon-General of the Navy agreed to support a similar proposition for the organization of a Dental Corps in the Navy.

"The favorable consideration of the Secretary of War is requested for this bill, which is believed to contain everything necessary for the organization of an efficient dental service."

The bill alluded to by the Surgeon-General has been printed in our pages, and undoubtedly the profession would be pleased to see it pass, but this pleasure will be based on the old axiom that "half a loaf is better than no bread." The writer, however, with due respect to the eminent gentleman, the Surgeon-General, cannot agree with him in the statement that this bill contains "everything necessary for the organization of an efficient dental service."

Various computations have been made as to the ratio which should exist between the whole number of dentists and the whole number of men in the Army. It has been said that one dentist to one thousand men would be sufficient. If the truth were known, a private dentist, having the constant and exclusive care of 500 persons, would find himself absolutely compelled to engage one or more assistants. Let us but study the problem of having one dentist to each one thousand men, and we will quickly see how inadequate the pending bill is, with its provision of sixty dentists.

<b>Strength of the Army.</b>	First, then, let us estimate the actual strength of the Army. In the main body we find 76,901; Philippine Scouts, 5,732; Hospital Corps, 3,500, making a total of 86,133. Of officers there are: main body, 4,425, and in the Philippine Scouts, 180, a total of 4,606. The above, with about 150 miscellaneous attaches entitled to dental treatment makes a grand total of 90,889. At the rate of one dentist to each thousand, this shows that at least 90 dentists are needed. However, we append a table showing that a corps of one hundred dentists would more nearly meet the requirement.
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# ITEMS OF INTEREST

## Distribution of an Adequate Dental Corps, giving Approximate Strength of Stations and Groups of the Smaller Stations.

### War Department.

Washington, I Colonel.	
General Hospitals .....	I
Walter Reed .....	I
Hot Springs .....	I
Bayard .....	I
Recruit Depots:*	
Slocum .....	6
Columbus Bks. ....	6
Jefferson Bks. ....	6
Logan & Hdq. D. C. ....	4‡
McDowell .....	3
West Point .....	2
	<u>30</u>

### Department of the East.

Hdq., Jay and Wood. ....	I§
Ethan Allen, rgt. .... rgt.	I
Monroe .....	I
Plattsburg Bks., .... rgt.	I
Adams .....	
A Greble .....	I,000 I
Mansfield .....	
B Madison Bks. ....	
Ontario .....	rgt. I
Niagara .....	
C Porter .....	I,200 I
Hancock .....	
Howard .....	
D McHenry .....	I,400 I
Washington	
Hunt	
Dupont .....	
E Mott .....	I,400 I
Totten .....	
Schuyler .....	
F Wadsworth .....	I,000 I
Hamilton .....	
G Myer .....	rgt. I
Washington Bks. ....	
Michie .....	
H H. G. Wright. ....	I,000 I
Terry .....	
Andrews .....	
I Banks .....	I,200 I
Revere .....	
Strong .....	
Warren .....	
Constitution .....	
K McKinley .....	I,400 I
Preble .....	
Williams .....	
L Henry Bks., P. R. ....	rgt. I
San Juan .....	
	<u>15</u>
	<u>46</u>

Carried forward

46

### Department of the Gulf.

Hdq. & McPherson ....	rgt. I‡
Oglethorpe .....	rgt. I
Caswell .....	
A Fremont .....	900 I
Moultrie .....	
Barrancas .....	
B Dade .....	I,100 I
Screven .....	
Jackson Bks. ....	
C Key West Bks. ....	800 I
Morgan .....	
	<u>5</u>

### Department of Texas.

Hdq. and Sam Houston ..	brgd. I‡
Bliss .....	
A Clark .....	rgt. I
McIntosh .....	
Sill .....	
B Logan H. Roots .....	rgt. I
	<u>3</u>

### Department of the Lakes.

Hdq. and Sheridan .....	rgt. I‡
B. Harrison .....	rgt. I
Thomas .....	rgt. I
Wayne .....	
A Brady .....	rgt. I
	<u>4</u>

### Department of Missouri.

Hdq., Omaha and Crooke.	I‡
D. A. Russell. ....	brgd. I
Leavenworth .....	brgd. I
Riley .....	brgd. I
Des Moines .....	rgt. I
Robinson .....	
Mackenzie .....	2 rgts. 2
A Meade .....	
	<u>7</u>

### Department of Dakota.

Hdq. and Snelling ....	I‡
A Assiniboine .....	
Lincoln .....	rgt. I
Missoula .....	
B Wm. Henry Harrison ..	I
Yellowstone .....	
	<u>3</u>

### Department of Colorado.

Douglas .....	rgt. I
Apache .....	
Duchesne .....	
A Huachuca .....	rgt. I
Whipple Bks. ....	
Wingate .....	
	<u>2</u>
	<u>70</u>



Carried forward 70

### Department of California.

Hdq. and Gen. Hosp.,	1§	
San Francisco		
Presidio, S. F. ....brgd.	I	
Presidio, Monterey .... rgt.	I	
Baker .....		
Barry .....		
Miley .....		
A Mason .....	1500	I
Rosecrans .....		
Sequoia Nat. Park..		
Yosemite Nat. Park		
B Honolulu .....		
Shafter .....		
Scofield Bks. .... rgt.	I	5

### Department of Columbia.

Hdq. and Vancouver Bks..	1†	
A George Wright....		
Lawton .....	rgt.	I
B Boise Bks. ....		
Walla Walla .....		
Ward .....		
Worden .....	1200	I
C Casey .....		
Columbia .....		
Flagler .....		
Stevens .....	1100	I

### ALASKA.

Davis .....		
Egbert .....		
Gibbon .....		
Liscom .....		
St. Michael.....		
Seward .....		
Valdez .....	rgt.	I 5

Total in U. S. .... 80

### Philippines Division.

Hdq. & Hosp. ....	1§	
Division Hosp.....	1	
Baguio .....	I	
Corragidor .....	I	4

### Department of Luzon.

Hdq. & Manila .....	1†	
McKinley .....	brgd.	2
Stotsenburg .....	rgt.	I
Batangas .....	rgt.	I
A Gregg .....		
Wallace .....	I	
B Deraga & South ...	I	7

### Department of Visayas.

Hdq. & Ilo Ilo.....	1†	
Field .....	3	4

### Department of Mindanao.

Hdq. and Zamboanga ..	1†	
Keithley .....	I	
Overton .....	I	
Jolo .....	I	
Field .....	I	5

Total Philippines..... 20

Total U. S..... 80

Total..... 100

\*About 25,000 recruits pass through these stations annually.

†One Major and three assistants.

‡Majors, except Hdq. Dept. of the East, which would have a Lieutenant-Colonel.

§Lt.-Colonel.

Again, we say, that the pending bill must be accepted if we can get no better. Nevertheless we present a draft of a bill which, we believe, Congress would be wise to substitute for that before it, because, with better dental service in the Army, the United States would have a better Army. With soldiers whose teeth were kept in constant repair, we would have men with better digestions, men in better health, men of greater efficiency. We would have fewer men in hospital, and, therefore, in time could curtail the hospital staff. Also, with more dentists the Army would require less physicians, and in time our soldiers would be living examples to prove the old saw that "an ounce of prevention is worth a pound of cure."

The following is the bill which has been compiled by a close student of the dental needs of our Army:



## To Improve the Efficiency of the Army.

**Proposed  
Bill.**

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled :

That there shall be attached to the Medical Department of the Army a Corps of Dental Surgeons which shall be composed of one colonel, two lieutenant colonels, twelve majors, forty-five captains and first lieutenants, and forty acting dental surgeons, whose duty it shall be to serve professionally the personnel of the Army, and to perform such other duties as may be prescribed by competent authority.

That all original appointments to the Corps of Dental Surgeons shall be as acting dental surgeons, who shall have the same official status, pay and allowances as the contract dental surgeons now authorized by law.

That acting dental surgeons who have served two years in a manner satisfactory to the Surgeon-General of the Army shall be eligible to appointment as first lieutenants, and, after passing an examination which may be prescribed by the Surgeon-General shall be commissioned with that rank, to fill existing vacancies in the Corps: Provided that, until all the vacancies created by this act are filled, a sufficient number of acting dental surgeons may be appointed to make the total strength of the Corps one hundred.

That the rank, pay, allowances, and right to promotion in the Corps of Dental Surgeons shall be the same as of corresponding grades in the Medical Corps, and their right to command shall be limited to the Corps of Dental Surgeons: Provided that time served as acting or contract dental surgeons shall be reckoned in computing the increased service pay of such as are appointed under this act.

That the appointees as acting dental surgeon must be citizens of the United States, between twenty-two and thirty years of age, graduates of standard medical or dental colleges, of good moral character and professional repute, and shall be required to pass the usual physical examination required for appointment in the Medical Corps, and a professional examination, which shall include tests of skill in practical dentistry and of proficiency in the usual subjects of a standard dental college course: Provided that the dental surgeons attached to the Medical Department, at the time of the passage of this act, may be eligible for appointment, one as colonel, one as lieutenant colonel, four as majors, ten as captains, and the others as first lieutenants.

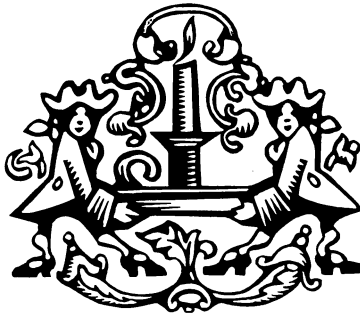
Provided further that the examinations for such appointments may be waived in the case of dental surgeons in the service at the time of the passage of this act, whose efficiency reports and entrance examinations are





satisfactory to the Surgeon-General: And provided further that three years from the passage of this act the senior major shall be promoted to the rank of lieutenant colonel to fill the remaining vacancy in that grade, and two senior captains to the rank of major each year until the remaining vacancy in that grade, and two senior captains to the rank of major each year until the remaining vacancies created by this act in that grade are filled.

That the Surgeon-General is authorized to appoint boards of examiners to consist of not less than three members, one of whom shall be a surgeon in the Army and the others commissioned officers in the Corps of Dental Surgeons, to conduct the examinations herein prescribed.





# SOCIETY ANNOUNCEMENTS

## National Institute of Dental Pedagogics.

The annual meeting of the National Institute of Dental Pedagogics will be held in Washington, D. C., December 27, 28 and 29, 1910.

JOHN Q. BYRAM, President.

Indianapolis, Ind.

## The Second District Dental Society—Taggart Meeting.

The Second District Dental Society of New York takes pleasure in announcing that its essayist for the December meeting will be Dr. William H. Taggart, of Chicago.

Ever since Dr. Taggart startled the dental profession, and revolutionized the practice of dentistry by announcing his method of making cast gold inlays, he has been engaging his inventive mind with the problem of overcoming the minor difficulties which, in the past, have made the casting of gold a little short of being an exact science. At the meeting now announced Dr. Taggart will exhibit and demonstrate the use of several appliances with which he has practically, if not absolutely, overcome all the difficulties.

He will show for the first time his newly invented electric annealer with which the inlay pattern wax is automatically kept at just the proper temperature and consistency, so that the operator at all times may turn to his instrument table and find a piece of inlay wax ready for use.

He will exhibit a new appliance wherewith the mixing of his investment material is made so exact, that the proceeding automatically is repeated every time an investment is required.

Also a new appliance for removing the wax from the mould without damage to the investment itself.

## SOCIETY ANNOUNCEMENTS

Using the above appliances, and in conjunction with his new investment compound, Dr. Taggart will clinically demonstrate several new methods in connection with casting, including a new method of making crowns.

The meeting will occur on Monday evening, December 12th, in the grand ball room at Delmonico's in New York City. The meeting proper will be preceded by a Bohemian Smoker. The clinical demonstration will occur in the afternoon in the Howard Building, Fifth Ave. and 47th St.

All ethical dentists outside of those on the monthly mailing list of the Society, if they desire to be present, will please send post-card, with their names and addresses, to the undersigned, who will then mail the regular invitation when issued, giving all particulars as to how to reach the meeting place.

WARRINGTON G. LEWIS, Sect'y.

162 Clinton Street, Brooklyn, N. Y.

---

### Wisconsin Board of Examiners.

The semi-annual meeting of the Wisconsin State Board of Dental Examiners for the examination of applicants for a license to practice dentistry in the State of Wisconsin, will be held at the Wisconsin College of Physicians and Surgeons, corner Fourth Street and Reservoir Avenue, Milwaukee, beginning Monday, January 8, 1911, at 9 A. M.

For application blanks and general information, address

G. C. MARLOW, Sec'y.

Lancaster, Wis.

---

### South Dakota Board of Examiners.

The South Dakota State Board of Examiners will hold its next meeting at Sioux Falls, S. D., January 10, 1911, beginning at 1.30 P. M. and continuing three days. All applications for examination, together with a fee of twenty-five dollars, must be in the hands of the secretary by January 1st. Applicants who have not complied with the above will not be permitted to take the examination. For further information, blanks, etc., address

ARIS L. REVELL,

Lead, S. D.



### **Alumni of the Dental Department of the University of Southern California.**

The annual meeting of the Alumni of the Dental Department of the University of Southern California will be held about the third week in December. The entire day will be devoted to clinics and exhibits. Preparations are now under way to make it a grand success. A large attendance is expected, as all practitioners are cordially invited. Programs will be mailed in the near future.

C. J. R. ENGSTROM, Sec'y and Treas.  
604 Auditorium Bldg., Los Angeles, Cal.

---

### **New Jersey State Board of Registration and Examination in Dentistry.**

The New Jersey State Board of Registration and Examination in Dentistry will hold their regular annual meeting in the Assembly Chamber of the State House, Trenton, N. J., December 5, 6, 7, 1910.

All applications must be in the hands of the secretary ten days prior to the meeting.

For further information apply to

CHARLES A. MEEKER, D.D.S., Secretary.  
29 Fulton St., Newark, N. J.

---

### **District of Columbia Board of Dental Examiners.**

The next regular meeting of the Board of Dental Examiners for the District of Columbia will be held in the Dental Department of the Georgetown University, January 9, 10, 11, beginning at 9 A. M.

Applications must be in the hands of the Secretary at last five days prior the date of the examination. For further information apply to

CHAS. W. CUTHBERTSON, Sec'y.  
309 Seventh St., N. W., Washington, D. C.

---

### **New Hampshire Board of Registration in Dentistry.**

The New Hampshire Board of Registration in Dentistry will meet November 30 to December 2, 1910, at Masonic Banquet Hall, Manchester, N. H. All persons must take the examination and become registered before beginning practice in this State.

A. J. SAWYER, D.D.S., Secretary.  
Manchester, N. H.

# Items of Interest

**A** Monthly . . .  
**Magazine of**  
**Dental Art, Science**  
**and Literature . . .**



**Published by Consolidated**  
**Dental Manufacturing Co.**  
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4th Street, New York . .



**Subscription, \$1.00 per year**  
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**Vol. XXXII. No. 12**  
**December**  
**1910**



**R. Ottolengui,**  
**M.D.S., D.D.S., LL.D.**  
**Editor**  
**80 W. 40th St.**  
**New York**

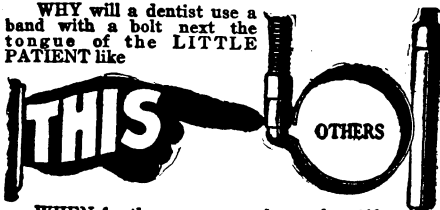
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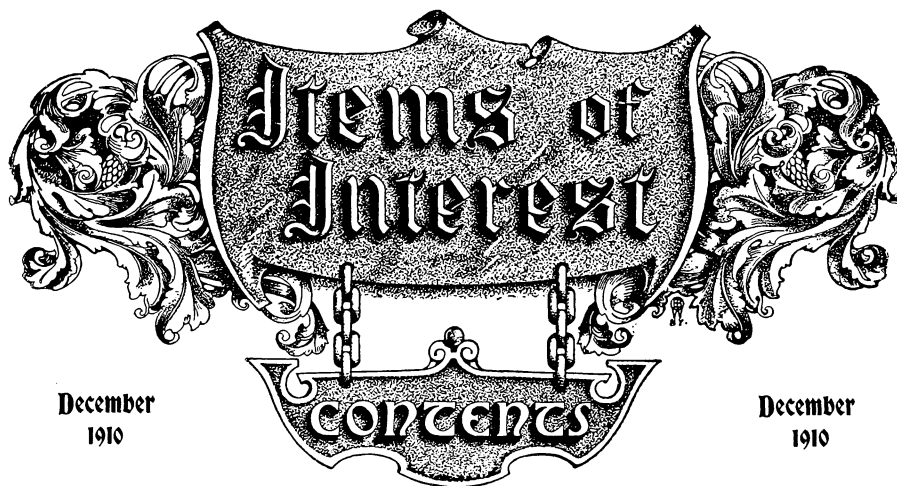
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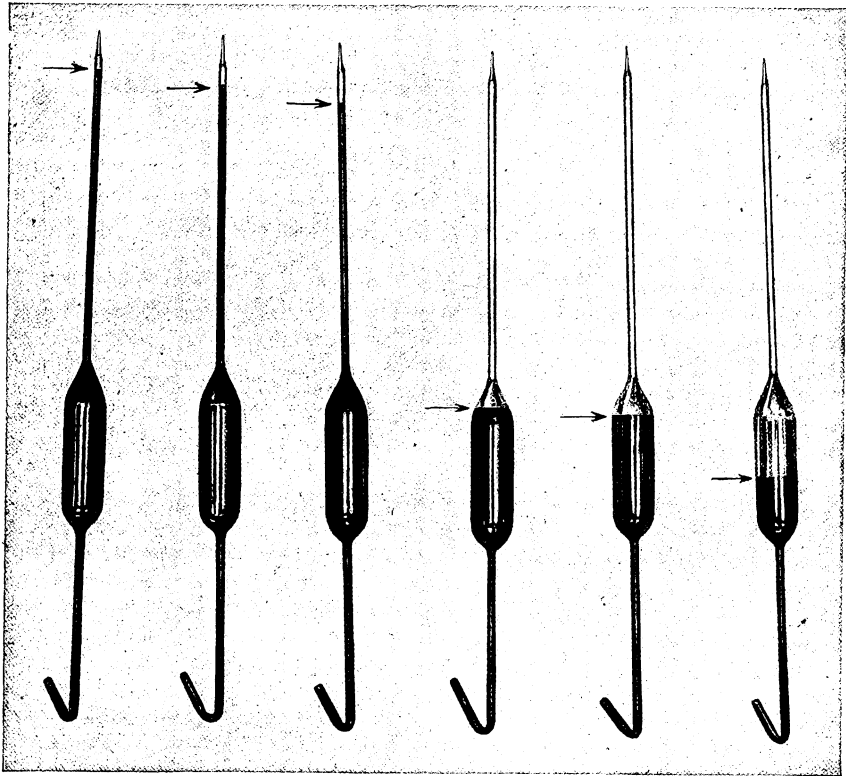
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# Which Hydrogen Peroxide Keeps Better ?

NOTE THE RELATIVE LOSS OF OXYGEN.



PARKE, DAVIS & CO.'S PRODUCT.

A COMPETITOR'S PRODUCT.

These gas pipettes were filled with fresh samples of Hydrogen Peroxide just four weeks before the photograph was taken. As the oxygen gas escaped it rose to the top and forced the solution out of the opening below.

Which product kept better? Which one retained most successfully its content of oxygen?

Parke, Davis & Co.'s preparation is preserved with acetanilide. The other manufacturer says acetanilide isn't necessary, and that his product keeps without it. But does it?

Observing how the oxygen escapes in some products, and exerts a dangerous pressure on both cork and bottle, is it any wonder that certain brands of Hydrogen Peroxide have to be put up in extra strong bottles with the corks wired in?

*Hydrogen Peroxide (P. D. & Co.) is the best peroxide. Use and prescribe it.*

## PARKE, DAVIS & COMPANY

HOME OFFICES AND LABORATORIES, DETROIT, MICH.

# TOOTH ANATOMY IN

“The teeth of different individuals show considerable variety of form. Some persons have teeth with very long crowns, broad in the mesio-distal direction at their occluding surfaces and narrow at their necks. They are known as ‘bell-crowned’ teeth. Again, some individuals have teeth that, in their mesio-distal diameter, are nearly as thick at their necks as at the occluding surfaces, making their inter-proximate spaces very narrow, the teeth almost, or quite, touching along the whole length of the crown. They are known as ‘thick-necked’ teeth. The more common form is midway between these two extremes.”

—G. V. Black's *Descriptive Anatomy*.

¶ In the construction of our teeth and Davis Crown Molds, we have followed Nature's lead and have produced a large variety of the forms mentioned by Dr. Black, viz., “bell-crowned” and “thick-necked” molds, as well as “intermediate” forms between these two types.

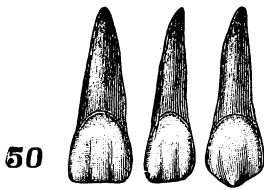
¶ On the opposite page are some illustrations of Davis Crowns. Note how true in anatomical contour these crowns are, and how closely they may be adapted to the root. They are shaped at the neck to cover the root properly and are made in a large variety of forms to aid one in restoring anatomical conditions.

¶ THAT LIVE TOOTH APPEARANCE of the Davis Crown and the variety of molds afford the dentist an ideal substitute for natural crowns.

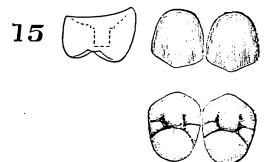
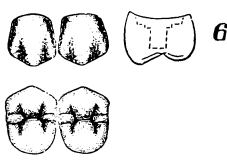
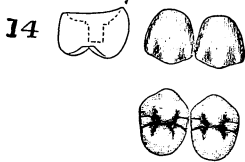
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# DAVIS CROWN MOLDS

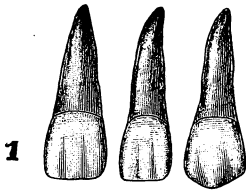
## BELL-CROWNED TEETH



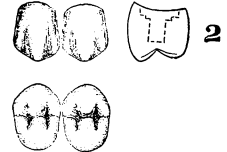
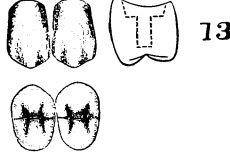
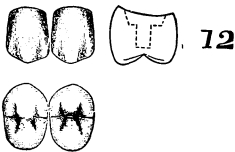
### UPPER BICUSPID 2S



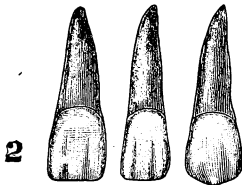
## THICK-NECKED TEETH



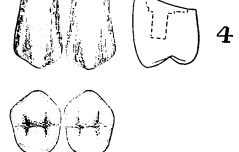
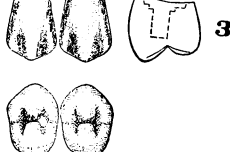
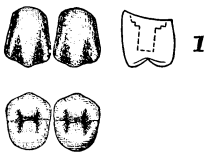
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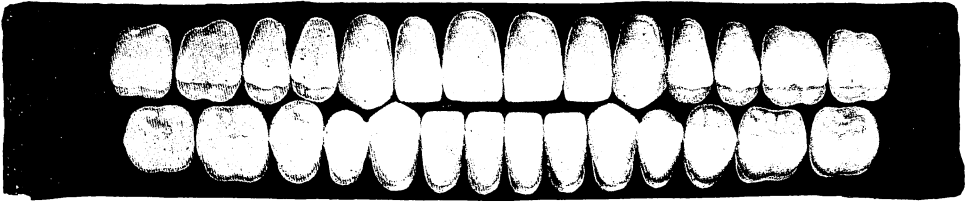
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# Consolidated Porcelain Teeth

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in appearance.  
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## **IN DENTAL CHAIRS**

### **USED MORRISON DENTAL CHAIRS**

### **at \$20.00 each**

BY the closing of a dental infirmary we were able to secure a quantity of Morrison chairs at a low price, and will offer them, *while they last*, at the bargain price of \$20.00 each.

These are regular operating chairs, but will be found useful for extracting or examinations if you already have an operating chair in your office.

Orders will be filled in turn as received and no orders will be accepted unless accompanied with cash in full.

Price is F. O. B. New York City. Boxing, \$2.00 each.

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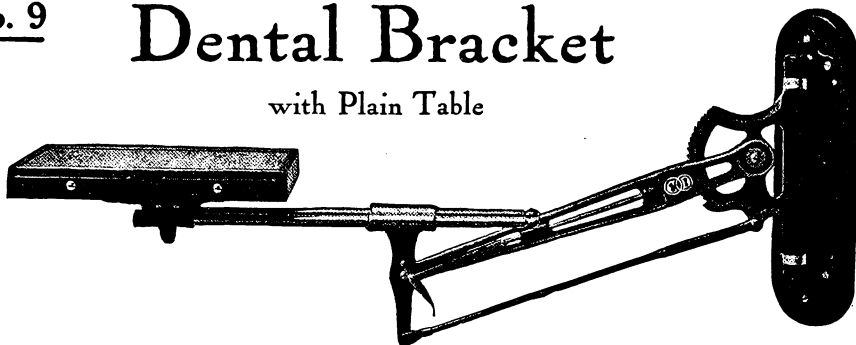
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**130 Washington Place : : NEW YORK CITY**

No. 9

# Dental Bracket

with Plain Table



**T**HIS bracket is strong, convenient, easy to adjust, neat in appearance, and decidedly practicable. Pressure of the forefinger upon the trigger releases the ratchet so that the arm can be raised or lowered with one hand. The arm is held securely in the desired position (always horizontal) by steel teeth which fit into the ratchet. The design and construction permit its easy adjustment to many positions, in all of which it is held rigidly to prevent shaking or rocking of the table. The table revolves on a pivot and can be extended or withdrawn on the sliding parallel bars to which it is attached. The full length, when extended, is 44 inches; when drawn back, 10 inches. The table has a horizontal range of 12 inches, and its vertical range is 23 inches. The bracket has a swing of 46 inches. The table has two shallow drawers which can be pulled out from either side. Brackets are fitted with walnut board; oak furnished if specified.

## FINISHED IN THREE DIFFERENT STYLES

No. 9A—Nickel-plated throughout.

No. 9B—Black enamel finish on castings and nickel-plated rods and tubing.

No. 9C—Antique copper finish throughout.

No. 9E—White enamel finish.

## PRICES

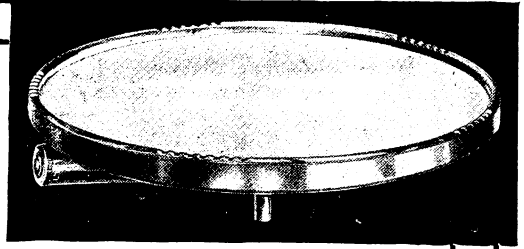
Bracket No. 9A, 9B or 9C

With Plain Table, as shown.....	\$15.00
With Wood Panel Sides, Allan Table (oak or walnut).....	18.50
With French Plate Mirror Sides, Allan Table (oak or walnut)	20.50
Without Table.....	12.00
White Enamel (add to above prices).....	2.00
Table.....	3.00
With Mahogany Allan Table, add to above prices.....	2.00

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This is the new  
Consolidated



# Aseptic Bracket Table

*Made in the Consolidated Way*

WORDS and pictures can convey only a small idea of its beauty. We want you to see this table. Go to your nearest dealer; ask to see the *Consolidated Aseptic Bracket Table*. Look at it critically. Admire the snowy-white top that is like highly polished agate. Examine the heavily nickel-plated frame, with notches at convenient intervals in its rim for your instruments. Notice the nickel-plated cotton-holder underneath the top, out of your way, and yet easily accessible.

¶ Consider how aseptic the whole table is. Just lift the top out of the frame and place it in your sterilizing solution. Observe that there are no bolts nor screws to be loosened or tightened, and note that the top is held firmly by the removable rim.

¶ This table is made to fit any bracket. The price is \$10.00; with Round Metal Alcohol Lamp and special cotton-receptacle, \$12.50.

FOR SALE AT ALL LEADING DENTAL DEPOTS

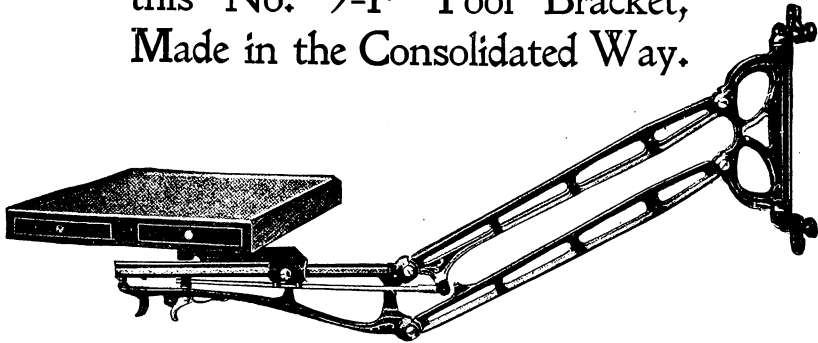
**CONSOLIDATED  DENTAL MFG. CO.**

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You really ought to see  
this No. 9-F Tool Bracket,  
Made in the Consolidated Way.



☞ A bracket should be more than a mere handy swinging shelf. It ought to combine utility with beauty and be an ornament to your office.

☞ Ask your dealer to show you the No. 9-F Consolidated Tool Bracket. You will agree that this bracket embodies convenience and beauty and will please your patients and be an attractive addition to your office. \* Note the richness of the black japanning, smooth and glossy, with pleasing gold striping, and the heavy nickel-plating. If you prefer white, look at the White Enamel Bracket. It instantly conveys to your mind the idea of cleanliness. The surpassing finish of these brackets and their great adaptability have pleased many dentists.

See that your bracket bears this



guarantee of quality, service and work of honest men.  
MADE IN THE CONSOLIDATED WAY

#### PRICES

No. 9 F.	Finished in black enamel, nickel-plated trimmings, without table,	-	\$10.00
No. 9 G.	Finished in white enamel, nickel-plated trimmings, " "	-	12.00
Table No. 10.	- - - - -	-	3.00

ON SALE AT ALL LEADING DENTAL DEPOTS

CONSOLIDATED  DENTAL MFG. CO.

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# Shrewd Buyers Always Buy the BEST

And that is the secret of the large and increasing sales of the

## Consolidated Engine

THE engine is one of the permanent necessities of your practice. If it is a good one it will last you a lifetime and be of perpetual usefulness. If it is a poor one it will last a few months or be an everlasting handicap and aggravation. The difference in the cost is perhaps a few dollars in the beginning, but in the end it amounts to hundreds, even thousands of dollars when you consider what is lost by your failure to do good work.

Being a permanent fixture it should be your dependable assistant at all times and *it will be if it's a*

### CONSOLIDATED ENGINE.

It is the faithful side partner in hundreds of successful practices now.

See pages 42-45 of Consolidated Dental Mfg. Co.'s Catalog for further information and illustrations of engines and equipment.

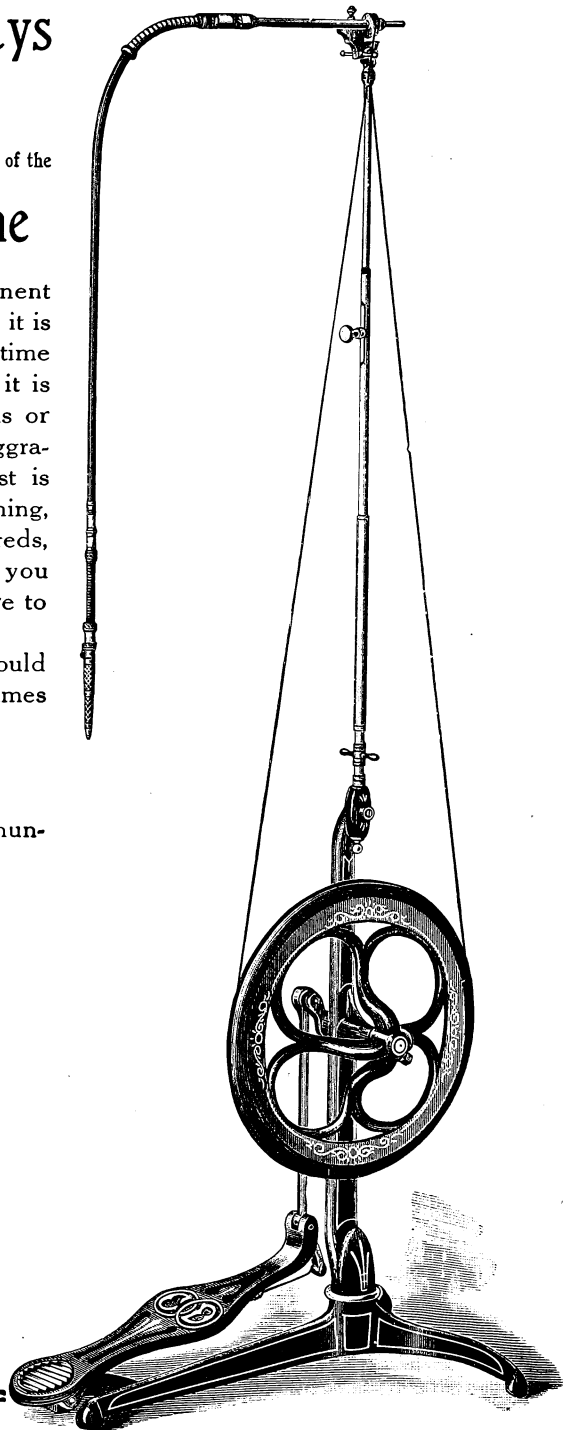
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A few reasons  
why it surpasses  
all others

One-piece spindle.

No oil covered sections  
exposed.

Automatic locking chuck for  
shanks of various sizes.

Rigid and long steady bear-  
ings in contrast to the old  
fashioned sectional and  
loose-jointed spindle.

Watch-work construction.

See pages 55-60 of Consolidated  
Dental Mfg. Co.'s Catalog for  
further information and illu-  
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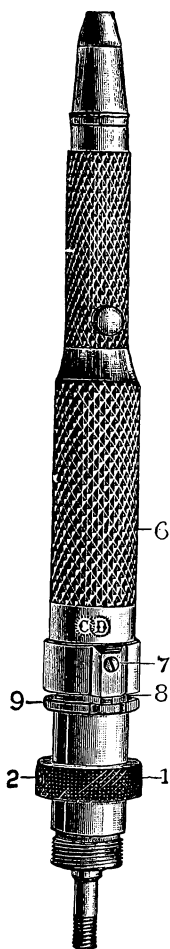


Fig. 1

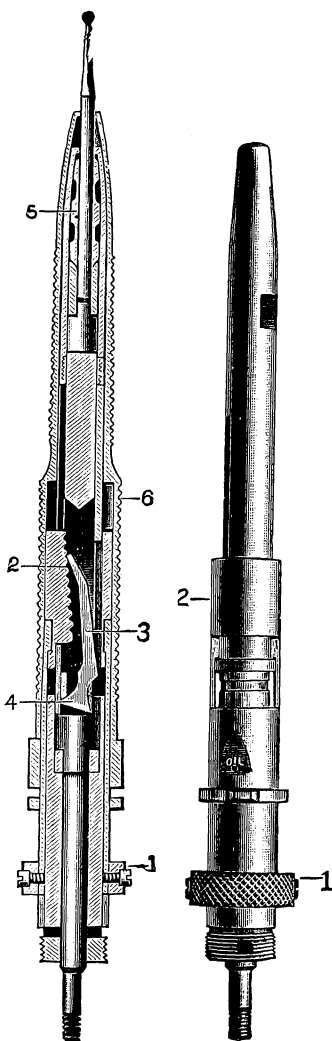


Fig. 2

FOR SALE AT ALL LEADING DENTAL DEPOTS

Consolidated  Dental Mfg. Co.  
NEW YORK

# Consolidated All-Cord Engine

**T**HE advantages of all-cord engines are emphasized in the Consolidated model.

It carries out perfectly every object for which all-cord engines are designed, and it is the only all-cord engine which does so in full. Every detail has been carefully studied and the imperfections of other engines of this type have been entirely overcome.

It is especially admired for the suppleness of the arms and joints and powerful force transmitted to the hand-piece. It is silent and devoid of vibration. Like all Consolidated engines it is perfectly balanced and runs like a ball-bearing machine.

The advantages of this perfect instrument in accomplishing dental operations are so numerous and valuable that every dentist should have one.

See page 43 of Consolidated Dental Mfg. Co.'s catalog for full description.

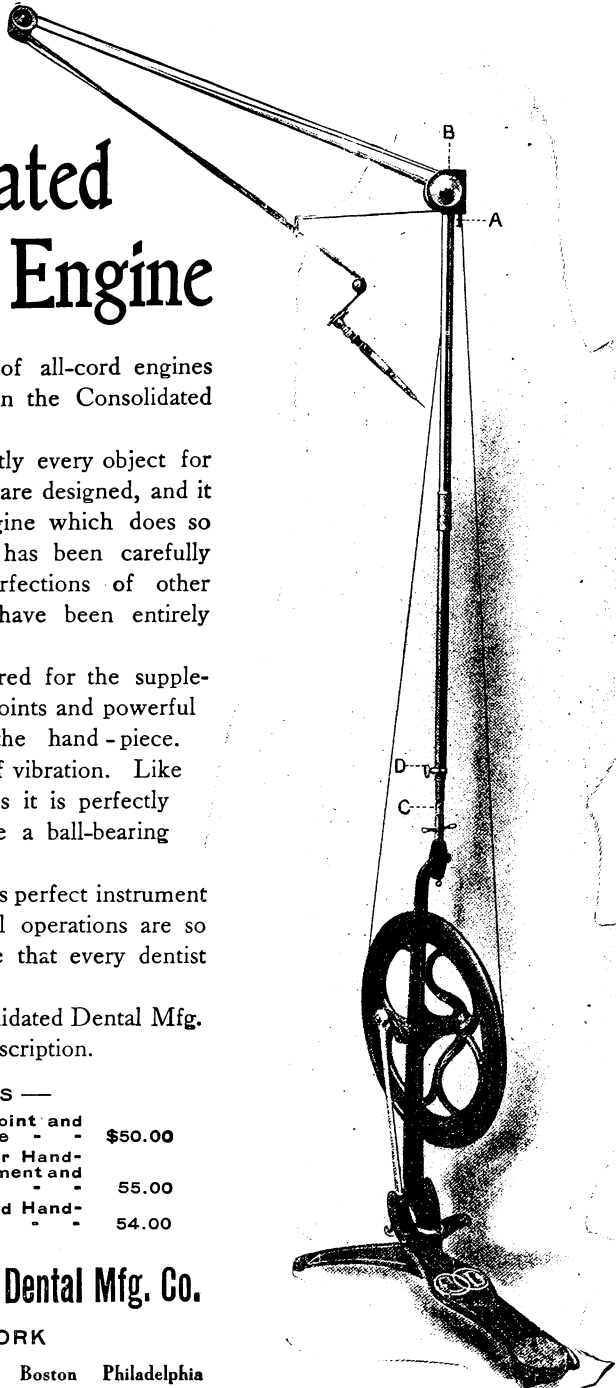
— PRICES —

Complete with Wrist-joint and Regular Hand-piece - -	\$50.00
Complete with Regular Hand-piece, Wrist Attachment and Slip-joint - - - - -	55.00
Complete with All-Cord Hand-piece - - - - -	54.00

**Consolidated**  **Dental Mfg. Co.**

NEW YORK

Chicago Detroit Cleveland Boston Philadelphia



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**Realization Burs** cut so quickly and quietly that with them you can make the most extended and thorough excavations without fatiguing the patient and without exhausting yourself. They are a boon to a dentist with fidgety, hypersensitive patients.

Because **Realization Burs** shave dentin without grinding or rasping, they are easier on the patient. The blades of **Realization Burs** are all of uniform length and angle.

**Realization Burs** are made by machine of a special steel, highly tempered, insuring smooth cutting edges which hold their razor keenness in the hardest cutting.

**Realization Burs** do not become heated nor cause discomfort to the patient. A small **Realization Bur**, operated at a high speed, will prove a most satisfactory obtunder of sensitive dentin.

*Sold by all leading dental depots at*

**\$ 1.00** per dozen

**5.50** per half gross

**10.00** per gross

**CONSOLIDATED  DENTAL MFG. CO.**

NEW YORK  
BOSTON

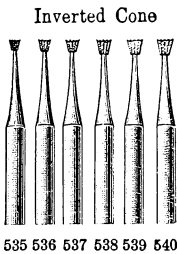
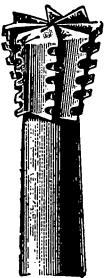
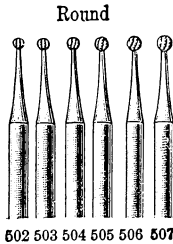
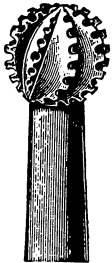
CHICAGO  
DETROIT

PHILADELPHIA  
CLEVELAND



# Realization

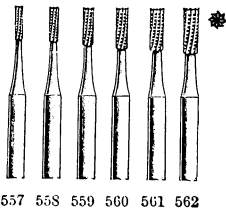
## Cross-Cut Enamel Burs



### Enamel Fissure Burs



Square End Fissure



These burs are made entirely by machine. Their cutting edges are multiplied by the transverse serrations and every edge is sharp. Realization Cross-Cut Enamel and Enamel Fissure Burs are accurate, perfectly finished, and without rough edges. Quiet, smooth and effective cutting of enamel is insured. With so many points attacking the enamel at once, these burs are very powerful, and remove tooth structure more aggressively and quickly than any other form of bur. Cavities prepared with Realization Cross-Cut Enamel Burs have walls fissured ready for the reception of plastic fillings, which cling tenaciously to walls so prepared.

### PRICES

	Dozen	Half Gross
Nos. 502 to 507 Round . . .	\$1.25	\$7.00
Nos. 535 to 540 Inverted Cone .	1.50	8.00
Nos. 557 to 562 Square End Fissure.	1.50	8.00

**Get the Sealed  
Package**

**Consolidated  Dental Mfg. Co.**

For Sale at all Leading  
Dental Depots



# Realization Broaches

The alignment of the barbs is scientifically accurate. They are not mere projections standing out at all angles, but are uniform in length, and are carefully inclined with the tips in a perfectly straight line.

By comparing the core of "Realization" Broaches with that of other styles, it is readily seen to be much finer and consequently more flexible.

The high quality and temper of the "Realization" Broaches strengthens the hair-like core, and insures against breakage,

They are very susceptible of manipulation in the exploration of sensitive and tortuous canals, and altogether the safest and most reliable for treating and extracting nerves. To find such accuracy in broaches so fine has heretofore been impossible; their flexibility and toughness is a strong and rare combination, being one of the distinctive features of these Broaches.

PRICE, PER DOZEN

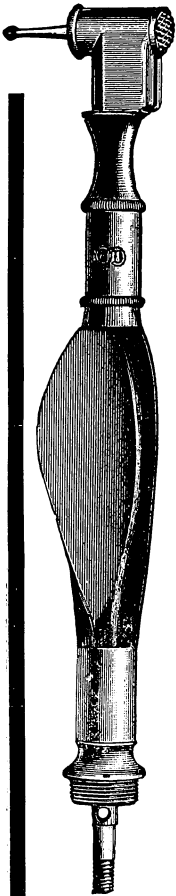
**\$1.00**

FIVE SIZES: Extra Fine, Fine, Medium, Coarse and Assorted  
½ Dozen in a Package

Consolidated  Dental Mfg. Co.  
NEW YORK

# CONSOLIDATED RIGHT-ANGLES

Style A



THE sliding bur catch on these handpieces is the decided improvement over all other styles, which has made these instruments so successful and popular during the comparatively short time they have been on sale. The slide is pushed up or down by slight finger pressure. The bur is thus easily locked or released by the most simple operation ever used in a handpiece. This is vastly superior to the other crude locking catches which cause the breaking of finger-nails and other aggravations and delays at critical moments. Besides, this is the most effective and positive lock to hold the bur ever used in a Right-Angle Handpiece. It insures immunity from the exasperating troubles which dentists encounter so frequently with insecure bur-locking devices in Right-Angle Handpieces.

¶ In our handpieces the bur does not wobble and it cannot fall out; it is inserted in the head, the slide pushed up, and immediately the handpiece is ready for use.

¶ The head of the Right-Angle Attachment is built exactly the same way, and both are examples of the high grade mechanical construction and skillful workmanship by which all our engine instruments have gained much use and favor.

Style B



## PRICES

Style A—Right-Angle Handpiece, with collar attached for Slip-Joint.....	\$6.00
—Right-Angle Handpiece, without collar for Slip-Joint .....	5.00
—Collar .....	1.00
Style B—Right-Angle Attachment to fit over Consolidated or No. 7 Handpieces .....	4.00

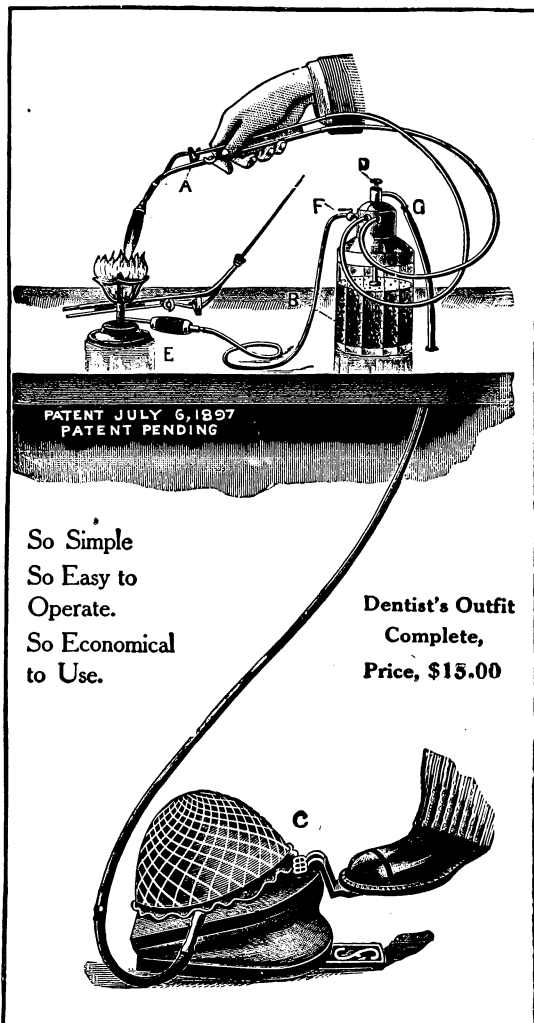
Set of Directions with each Attachment.

# SAMS' IMPROVED COMBINATION Blow Pipe Outfit

With Glass Generator. Burns Best With No Free Oil.

An absolutely SAFE glass generator is provided, and it contains no free gasoline. The mixture of air is regulated by the valve on the top of the generator, and size of flame is governed accordingly. This valve serves to graduate the air supplied above the absorbent and there mixed with the vapor laden air forced through the absorbent, thereby insuring absolutely correct proportions for perfect combustion under all conditions. A powerful flame may be maintained for a great length of time without impoverishing the fluid; this is impossible where free gasoline is present. The improved thumb valve on the blowpipe permits instant or gradual change of flame from heavy brush to the finest needle point. When set, the valve remains permanently in position and an unvarying flame is produced. This outfit is absolutely "non-blow-out." The valve will not leak gas and no gasoline can be drawn back into the Foot Bellows because there is NONE FREE, which may be demonstrated by inverting the generator. By means of a special clip the Handpiece will stand on the work bench in any desired position.

This is the original and genuine "Sam's" outfit. Beware of imitations.



So Simple  
So Easy to  
Operate.  
So Economical  
to Use.

Dentist's Outfit  
Complete,  
Price, \$15.00

Price Complete, \$15.00. Without Bellows, \$10.50. Glass Generator, only \$6.00.  
Blow Pipe, \$2.50. Bellows, \$4.50. Case Heater, \$2.00.

SOLE AGENTS

## CONSOLIDATED DENTAL MFG. COMPANY



## It Effectually Prevents Leakage of Gas

¶ The Consolidated flexible metal inhaler tubing is thoroughly gas-tight and practically indestructible.

This maroon silkline covered tubing is light, and with ordinary care will last indefinitely. It is so pliable that it can be tied into knots, but it is not made of rubber. It will add to the efficiency of your gasometer and will not have to be replaced.

¶ The Consolidated flexible metal inhaler tubing will prove more economical than the old, leaky, rubber tubing, because its initial cost is its final cost.

¶ The threaded connections at either end are alike and will fit the Consolidated gasometer and the inhaler.

*Sold at all leading dental depots in 4 and 6 ft. lengths at these prices:*

4 ft. length, \$2.20

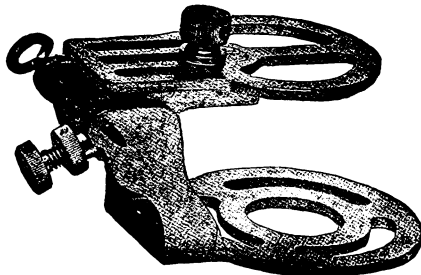
6 ft. length, \$3.30

CONSOLIDATED  DENTAL MFG. CO.



## A PERFECT Plain Line Articulator

No. 566



A high grade instrument far different from the rough, inaccurate articulators now in use, which are crude in comparison. It is superior in every detail to any other articulator of the kind offered to the dental profession. The zenith of perfection was never better represented in a dental appliance than in this beautiful articulator.

The use of instruments of this class elevates dentistry to an ART.

### PRICES

No. 566A—Bright Finish.....	each \$1.00
No. 566B—Plated.....	" 1 25

FOR SALE AT ALL LEADING DENTAL DEPOTS

Consolidated Dental  Manufacturing Company  
NEW YORK

No. 251A

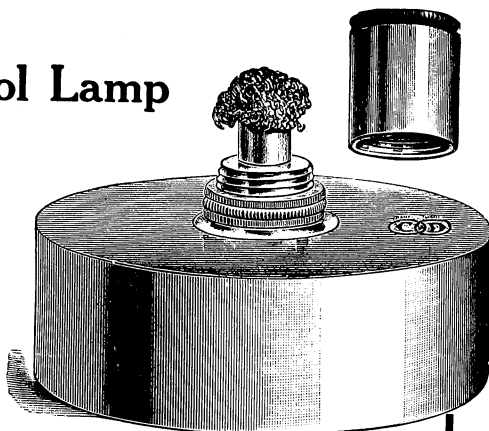
## Round All-Metal Alcohol Lamp

The shape and size of this lamp are excellent features. It is the lowest style made and cannot be upset.

Made of brass, nickel-plated and highly finished.

For further description see page 166 of Consolidated Dental Mfg. Co.'s Catalog.

Price, each, \$1.00



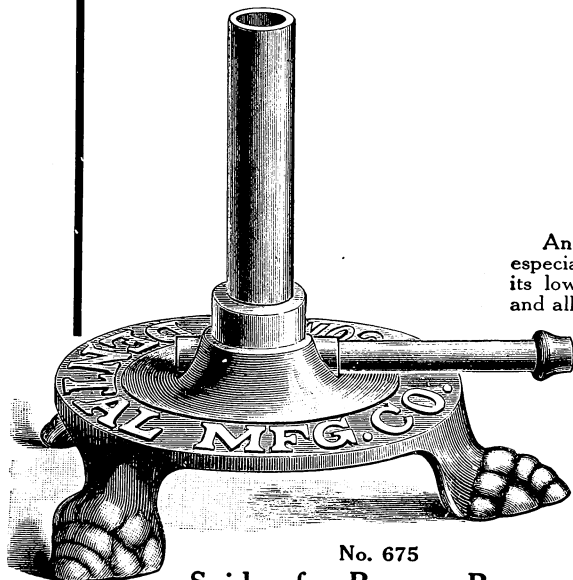
No. 674

## Bunsen Burner, Style A

An excellent burner for laboratory purposes, especially vulcanizing. The flame tube is open at its lower end, admitting a sufficient supply of air and allowing any particles of wax or other substance to fall through.

For further description see page 446 of Consolidated Dental Mfg. Co.'s Catalog.

Price, each, \$ .50



No. 675

## Spider for Bunsen Burner

This Spider fits Style A Burner as shown. Its uses are readily recognized.

Price, nickel-dipped, each, \$ .25

No. 676

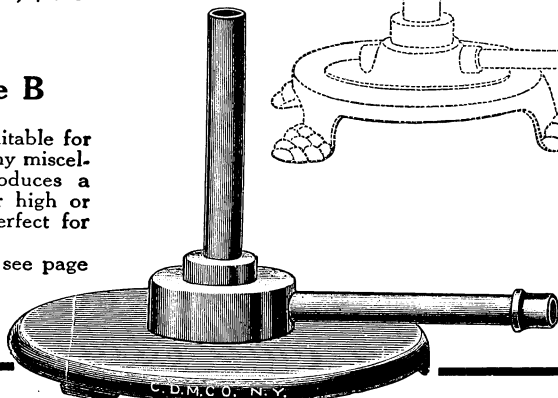
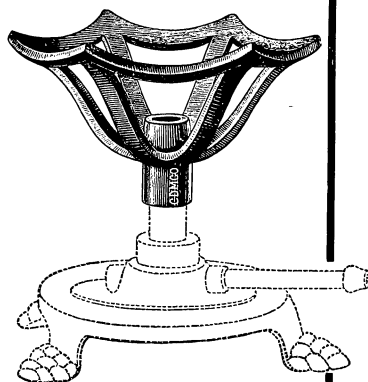
## Bunsen Burner, Style B

NICKEL-PLATED

An exceptionally neat burner, suitable for the bracket table as well as for many miscellaneous laboratory purposes. Produces a non-smoking, steady flame, whether high or low. The combustion is always perfect for dental purposes.

For additional interesting facts, see page 446 of Consolidated Dental Mfg. Co.'s Catalog.

Price, each, \$ .60



CONSOLIDATED  DENTAL MFG. CO.

# Begin the New Year With Your Accounts in Good Order

There is nothing so irksome to a busy dentist as keeping a set of books.

There is nothing so easy as overlooking and forgetting to make entries in these awkward books, and likewise nothing so expensive.

## The Triggs' Chart System

overcomes all those troubles, simplifies the keeping of your accounts, and improves the condition of this important part of your practice.

One chart for each patient forms the complete and correct record. It is much more convenient and much less cumbersome to jot down your charges on a chart than to make an entry in a book.

There are Cash Account Charts also. The charts are kept in a neat case of oak or metal and are classified alphabetically, and in other ways for convenience.

When you start this simple system your mind will be relieved of the burden you carry in the old way of "putting off" your bookkeeping "until some other time."

You can tell at a glance how any account stands if you use this system of bookkeeping. One card tells the story of the operations performed, the dates and the price. The same card records the money received. The whole account is before you on one card.

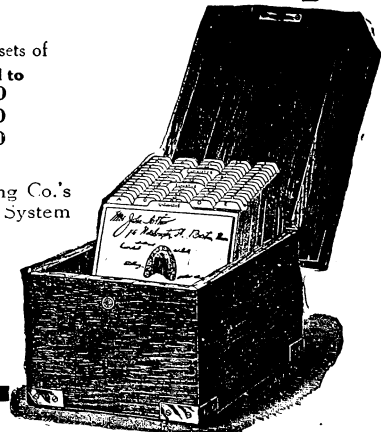
### PRICES

Complete System, including Charts, Cash Account Cards, three sets of Alphabetical Index Cards, in			Reduced to
Tin Case, small size . . . . .	\$6.00		\$5.00
Tin Case, large size . . . . .	8.00		6.00
Oak Case, large size . . . . .	12.00		9.00

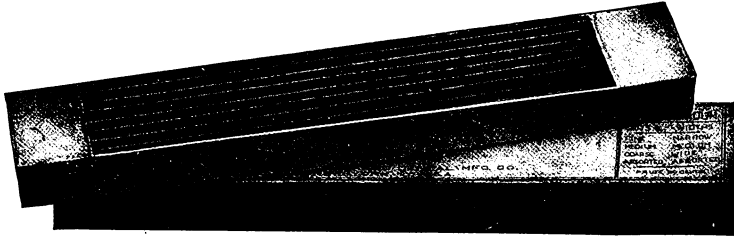
(All charts are lithographed on heavy Bristol Board)

See pages 478-480 of Consolidated Dental Manufacturing Co.'s catalog for further information and illustrations of Triggs' System of Dental Charts. **SEND FOR SAMPLE CHARTS**

**Consolidated**  **Dental Mfg. Co.**  
NEW YORK



# CRESCENT STRIPS



THIN AND STRONG

**A** MOST desirable combination of quality in strips. In producing these strips our first consideration is the selection of material of the maximum strength. Crescent strips are made of linen and expertly charged with selected abrasives and polishing compound. They are cut with a clean, smooth edge and can be used in the narrowest of spaces between the teeth. They are absolutely odorless and remarkable in efficiency and durability.

Our boxes are made with covered ends extending three-quarters of an inch over the box. These projections keep the ends of the strips in the boxes, preventing crumbling, straggling and loss of the strips when sliding the box in or out of the cover.

## No. 294A Crescent Polishing Strips

For putting a lustre on a filling after the finishing strips have been used. They have no cutting properties and can be used without danger of scratching or changing the contour of the surface produced by the finishing strip. We have incorporated in this strip a composition which produces a high polish. The "Crescent" quality is assurance of maximum strength. Put up in three widths—narrow, medium or wide, and in boxes of assorted widths.

Price per box, 50c.

## Crescent Finishing Strips

CARBORUNDUM .. GARNET

Both Carborundum and Garnet strips are  $6\frac{1}{2}$  inches long and are made in three grits—fine, medium and coarse, and three widths—narrow, medium and wide. We put them up in boxes of any of the above selections, or in assorted grits and widths.

### PRICES

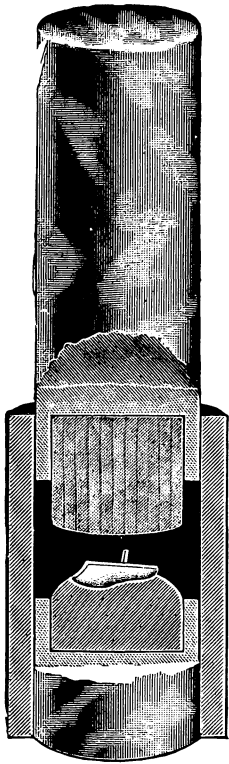
No. 294B—Carborundum, per box, \$0.50

No. 294C—Garnet . . . per box, \$0.50

FOR SALE AT ALL LEADING DENTAL DEPOTS

CONSOLIDATED  DENTAL MFG. CO.

# The AJAX SWAGER

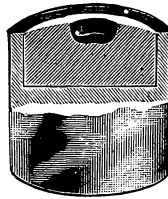


THIS swaging outfit consists of four parts, viz: The usual plunger, sleeve, cup and an extra cylinder.

All parts are made of steel to withstand the most severe usage to which swagers are placed in dental work. This is a practical device for swaging gold cusps, matrices for inlays, forming backings for artificial teeth or crowns, making seamless bands, and metal shaping in general required for crown and bridge work. Its range of usage is very wide, making it essential to the

equipment of a modern dental laboratory.

Crown and bridgeworkers will find this swager of continual assistance and can select



no device more useful, time-saving, practical or economical for the innumerable purposes it serves. It is guaranteed against chipping, bending or becoming otherwise defective through swaging operations. The wax or lac used for the impression is specially prepared, and is of the proper consistency for clean, sharp impressions, facilitating accurate swaging.

**Price, copper oxidized, including lac, \$2.00**

*A set of directions is included with each outfit.*

FOR SALE AT ALL LEADING DENTAL DEPOTS

**CONSOLIDATED  DENTAL MFG. CO.**  
NEW YORK

# LISTERINE

The best antiseptic for a dentist's prescription

As a daily wash for the preservation of the teeth, and for maintaining the mucous membrane of the mouth in a healthy condition, Listerine occupies a first place in dental and oral therapeutics. Listerine is truly prophylactic, in that it exercises an inhibitory action upon the acid-forming bacteria of the mouth, and thus maintains the alkaline condition so necessary for the welfare of the teeth.

## LISTERINE TOOTH POWDER

An innovation, in that it possesses neither fermentative nor harshly abrasive ingredients, Listerine Tooth Powder very acceptably meets all the requirements of a frictionary dentifrice, and promises to give much satisfaction to those who employ it, in conjunction with a mouth-wash of Listerine, suitably diluted.

*¶The undersigned will be pleased to send supplies of Listerine Tooth Powder samples for distribution to patients, upon receipt of the dentist's professional card.*

Lambert Pharmacal Co., St. Louis, Mo., U. S. A.



EXCHANGES

EXCHANGES

NOTE.—Rate for advertising in this department of ITEMS OF INTEREST is ten cents per word including captions, "Wanted," "For Sale," "Exchange," etc., and address. Initials charged as words. Rate for agency advertisements is twenty cents per word. Advertisements should reach us by the 15th of the month to insure insertion in the following month's issue, and are payable in advance.  
CONSOLIDATED DENTAL MFG. CO., Publishers, 130 Washington Place, New York, N. Y.

6082—WANTED—To buy a live practice, either ethical or advertising, in New England States. Address No. 6082, care of "Items of Interest," 130 Washington Place, New York.

6083—WANTED—All around assistant. Must be experienced, skillful, man of character. State salary, references, qualifications. Address "Permanent," care of "Items of Interest," 130 Washington Place, N. Y.

6084—FOR SALE—Up-to-date office, complete, modern equipment, desirable location. Owner connected with large manufacturing business which has made sudden demand for all his attention. Address "Whitney Bldg.," care of Wm. M. Williams, P. O. Box 1566, Springfield, Mass.

6085—FOR SALE—Growing \$3,000 practice, New York City. Invoice, \$1,300. Rent, \$20. Price, \$2,000. Easy payment. Address "Dentoral," care of "Items of Interest," 130 Washington Place, New York.

6086—TO LET—Fine Dental Office in centre of shopping district New York City, compressed air, gas, and electricity. Address "Nesdam," care of "Items of Interest," 130 Washington Place, New York.

6087—Orthodontist of experience wishes to associate with ethical dentist to take charge of orthodontia practice. Address "Orthodontist," care of "Items of Interest," 130 Washington Place, New York.

6088—FOR SALE—Dental practice of twenty-seven years, paying \$6,000 to \$8,000 yearly, best location in the city. Fully equipped and modern office, with lease and insurance. Reason for selling, other business. Address Chas. F. Diggs, cor. 9 and G. Streets, N. W., Washington, D. C.

6089—WANTED—A man of exceptional ability, in operating and bridgework, to purchase interest in established practice, and specialize in this work. References exchanged regarding ability and character. Must have \$2,500. Do not answer except you mean business. Address "Northwest," care of "Items of Interest," 130 Washington Place, New York.

6090—FOR SALE—Practice and outfit in city of six thousand population. Best location in city. Owner going to Oregon. W. M. Post, 100 W. Wisconsin Avenue, Neenah, Wis.

6091—TO LET—Dental Office, first floor, 375 Eighth Avenue, New York, large reception, operating, work and living rooms. Established over 20 years. Levy & Son, 389 Eighth Avenue, New York.

6092—FOR SALE—Best equipped office and best location, fifteen years. Tallahassee, Florida. Two thousand cash. Object, retirement. References, First National Bank, Capital City Bank. Address R. A. Shine, D. D. S.

6093—FOR SALE—Dental Practice doing \$3,000 cash; Pennsylvania town of 23,000 inhabitants. Office equipment, two chairs, electrical appliances and office furniture; \$600 cash takes all. Good reason for leaving. This is an elegant opportunity for some up-to-date man. Address "B," care Consolidated Dental Mfg. Co., Philadelphia, Pa.

See following page.

# WANTS. FOR SALE ETC.

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CONSOLIDATED DENTAL MFG. CO., Publishers, 130 Washington Place, New York, N. Y.

## EXCHANGES

Continued from preceding page.

6094—FOR SALE—Cheap. Practice and comparatively new fixtures. Established ten years. Going to specialize. Address, Box 1307, La Junta, Colo.

6095—Ethical, modern, Fifth Avenue corner practice for sale; N. Y. City. Address "California," care of "Items of Interest," 130 Washington Place, N. Y.

6096—FOR RENT—Unfurnished office, occupied by dentist 22 years in Penn. town of fifteen thousand. Present occupant retiring on account of age. Every dentist in town has more than he can do. Norman Loeb, 526 Jefferson Street, Philadelphia, Pa.

6097—FOR SALE—A fine dental outfit. Will throw in the location, also practice. I am located in a town in Southern Idaho which has a pay roll of \$25,000 per month. No opposition and a good business. Am going to quit the business. Address "X," care of "Items of Interest," 130 Washington Place, New York.

6098—WANTED—All-around man, good salary and chance for advancement. Also will buy second-hand electric engine. Address L. M. Knight, 724 City National Bank Building, Omaha, Neb.



**"Every Coat We Turn Out A Winner"**  
Dentists' Office Coats for professional work, made of White or fifty other shades of washable materials, fast colors, and thoroughly shrunk before made up. All coats made-to-measure and in any style desired.  
We pay express or postage to any part of the world. Write for samples, styles and prices, free upon request.  
**WEISSFELD BROS., Mfrs of Coats and Uniforms**  
*"The kind they all admire"*  
117A Nassau Street New York City  
We have no branches and are not connected with any other firm. Dentists giving orders to agents should specify Weissfeld Bros. of New York City.

**OLDEST AND LARGEST DEPOT**  
*in the*  
**"Oregon Country"**  
**WOODARD, CLARKE & CO.**  
Established 1865 Portland, Oregon

## Daly Gold Lining

(Patented)

The only all Gold Lining ever made. Endorsed by the highest dental and medical authorities. May be applied to new or old rubber plates, giving them all the beauties of solid gold plates.

**\$3.50 per book**

Cash must accompany all orders. Send for literature.

**J. F. RONEY, Laboratory**  
170 West 78th Street NEW YORK

**ZHONGIVA**

Suggested and used by Dr. D. D. Smith in Alveolar Pyorrhea and all inflammatory mouth disorders, erupting wisdom teeth, recession of the gums, gingivitis, irritation from wearing plates, etc.

Zhongiva is prompt and positive in its action and most pleasant to use. Zhongiva will not disappoint you. 20-years' professional endorsement. At all Druggists.

**JAMES J. OTTINGER**  
Manufacturer  
Spruce & 20th Sts., Philadelphia  
Send for sample.  
Please mention this journal when writing

Dental Sodium Dioxide  
For **BLEACHING**  
**STERILIZING**  
4 in 1 **SAPONIFYING**  
**OBSTUNDING**



Regarding application read Am. Text Book Op. Dentistry (3d Ed.)  
**\$1 per Tin from Dealers or**  
**ROESSLER & HASSLACHER CHEM. CO.**  
**NEW YORK**

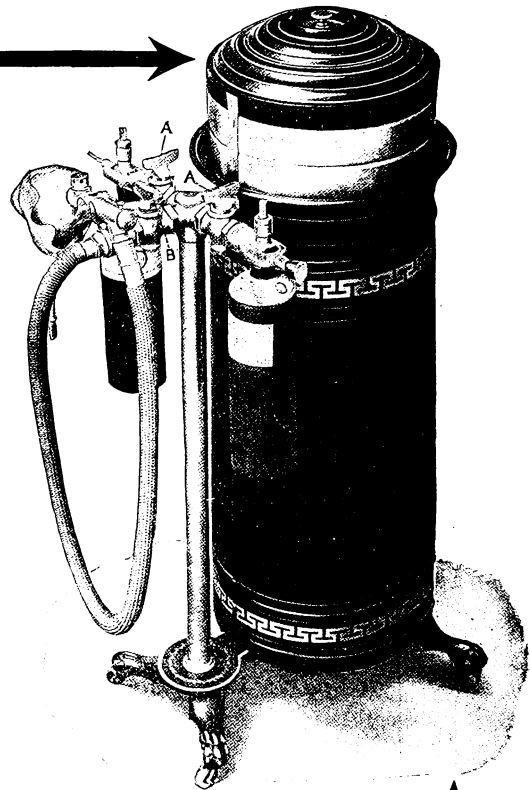


The Illustration Shows the  
**Latest Improved Model**  
of the  
**Consolidated Gasometer**

now the most efficient, convenient and economical Gasometer made. Gas cylinders of any size can be attached to the yoke, and, by a turn of the wheel-key, any desired quantity of gas can be let into the gas tank or bell. Its capacity and weight, as well as the gas pressure, are accurately computed, and the bell responds to the pressure of the gas as actively as the needle of a delicate gauge.

The flow of gas through the inhaler is always uniform and steady and passes into it at an even and almost imperceptible pressure. The gas is not blown into the patient's face, but it is supplied quietly in ample quantity for full inhalations without waste. This is accomplished by the scientific design and dimensions of the Gasometer.

The usual substantial material and high-class workmanship known as "Consolidated" have entered into its construction, and its durability and mechanical perfection will provide a dentist with a serviceable Gasometer for a lifetime. Galvanized sheet-iron or other cheap corrosive metals are not used. It is made of planished copper and brass tubing.



**PRICES (Without Cylinders):**

In maroon finish.....	\$75.00
With inhaler, inflatable mouth-piece, and 4 ft. length of covered flexible metal tubing.....	85.20
With inhaler, inflatable mouth-piece, and 6 ft. length of covered flexible metal tubing.....	86.30
For white enamel finish, add to above prices.....	5.00

For further description, see Consolidated Dental Mfg. Co., Catalog, page 213

**CONSOLIDATED**  **DENTAL MFG. CO.**

NEW YORK  
BOSTON

CHICAGO  
DETROIT

PHILADELPHIA  
CLEVELAND

# Fountain Spittoons

MADE BY

## A. C. CLARK & CO.

ARE SOLD BY THE BEST DEALERS AT THESE  
PRICES:

Double Bowl . . . . .	\$39.65 cash
New Model Single Bowl . . . . .	35.00 "
Single Bowl . . . . .	28.00 "
Reservoir . . . . .	28.00 "
Wash Bowl . . . . .	17.50 "
Gas Outfit . . . . .	22.50 "

F.O.B. CHICAGO

¶ There is no *sane* reason why you should pay more—  
unless you want to buy on time payments.

¶ We guarantee every part of any of our goods.

SEND FOR NEW BOOKLET

## A. C. CLARK & CO.

Grand Crossing

CHICAGO

# Dentinol

(Applied by the Dentist)

# Pyorrhocide

(Used as a Dentifrice)

## 20 PYORRHEA CASES

were selected by Dentists of Philadelphia and presented at our **PYORRHEA CLINIC** for treatment. **EVERY DENTIST** within a radius of fifty miles was invited to **BRING THE HARDEST PYORRHEA CASE** he knew of and **WE WOULD NOT ONLY TREAT THE CASE, BUT CARRY IT THROUGH TO COMPLETION AND SHOW THE RESULTS.**

**“PRESENT YOUR OWN CASE”**  
**“WATCH ALL THE TREATMENTS”**  
**“SEE THE RESULTS”**

is our method of demonstrating our **preparations.**

**YOU ALSO** can get beautiful results with the use of the improved Dentinol Pyorrhea Scalers (set of 12) and the Dentinol Perfect Syringe (flat tip) in conjunction with

## DENTINOL and PYORRHOCIDE

The fact that our preparations contain **NO ACID NOR HARMFUL DRUG**, together with the fact that **QUICK RESULTS** follow treatment, makes them very valuable to **ALL DENTISTS.**

**SPECIAL PACKAGE** containing 1 large bottle of Dentinol, 5 cans of Pyorrhocide and a medicine bottle labeled “Dentinol” sent, express prepaid, upon receipt of \$5 and the name of your Dental Depot.

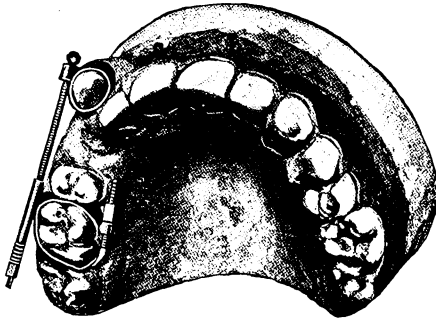
# THE DENTINOL & PYORRHOCIDE CO.

1 UNION SQUARE :: :: NEW YORK CITY

## The Canning Regulating and Retaining Appliances

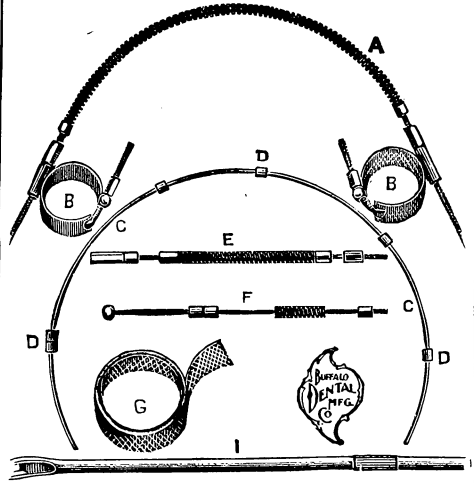
are fully illustrated in their application and construction in the booklet which we want you to have. Ask for it.

## Elastic Tension Traction Screw



### Instructions for Attachment

This screw works on the same principle as the jack screw. To adjust, use molar clamp band "B" on anchor tooth and band the tooth to be moved with a plain band as shown in cut. Have the tubes on a line with each other. Insert the traction bar through the anterior tube and push it back through the tube on anchor band. Slip the spiral spring over portion of the screw that projects through latter tube and turn on the nut till the coils of the spring are closed.



Patented February 28, 1905

The Complete Set as Shown, \$6.00

### Price of Parts

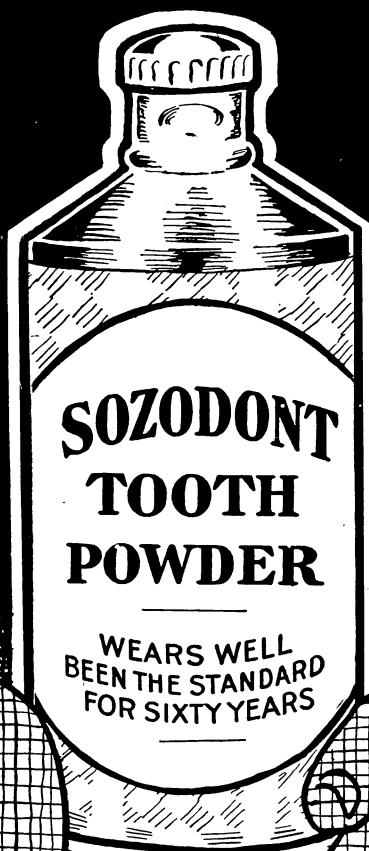
A. Expansion Arch	- - -	\$1.00
B. Adjustable Clamp Bands, each		1.00
C. Retaining Wire	- - -	.30
D. Retaining Tubes	- - -	.30
E. Elastic Pressure Jack Screw	-	1.00
F. Elastic Tension Traction Screw		1.00
G. Indented Band Material	- -	.25
Wrench	- - -	.15

The material composing Canning's Appliances is from a special formula of German Silver, heavily gold plated.

**Buffalo Dental M'fg Co.**

Buffalo, N. Y., U. S. A.

Sole Wholesale Distributors



## The One Best

Into every can of  
Sozodont Tooth Powder

there enters 64 years of  
experience and whole-  
some effort to provide  
the one safe and reliable  
dentifrice to perpetuate  
the results of your own  
untiring efforts.

We offer  
**SOZODONT**  
Liquid - Powder - Paste



ESTABLISHED 1865

# SAMSON RUBBER

**EUGENE  
DOHERTY**

**DENTAL  
RUBBERS**



Trade Mark  
No. 3788

Registered  
June 20, 1876

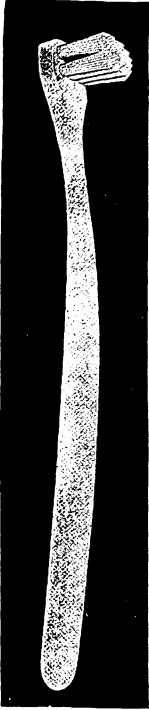
## RETAIL PRICE-LIST.

SAMSON RUBBER		Per lb.	5 lb. lots	10 lb. lots	25 lb. lots	50 lb. lots
Pink Rubber, light shade	}	\$4.00	\$3.50	\$3.35	\$3.25	\$3.10
Pink Rubber, medium light shade		Per lb.	5 lb. lots	10 lb. lots	25 lb. lots	
Pink Rubber, deep shade						
White Rubber						
No. 1 Rubber, medium red	}	Per lb.	5 lb. lots	10 lb. lots	20 lb. lots	40 lb. lots
No. 2 Rubber, extra light red		\$3.50	\$3.25	\$3.15	\$3.00	\$2.90
Mottled Rubber, light or dark shade		3.75	3.25	3.10	3.00	2.85
Para Black Rubber	}	Per lb.	5 lb. lots	10 lb. lots	20 lb. lots	40 lb. lots
Pure Black Rubber		\$4.00	\$3.75	\$3.50	\$3.25	\$3.10
Jet Black Rubber						
Gutta Percha, Pink or White, for Base Plates	}	Per lb.	5 lb. lots	10 lb. lots	20 lb. lots	40 lb. lots
		\$3.00	\$2.75	\$2.60	\$2.50	\$2.40
<b>Eugene Doherty's New Hold Fast Maroon Colored Rubber</b>		}	Per lb.	5 lb. lots	10 lb. lots	25 lb. lots
Maroon Rubber, light shade						
Maroon Rubber						
White Gutta Percha, in round sticks for Permanent Filling						
Red Vulcanizable Gutta Percha for plates			Per lb.	10 lb. lots	25 lb. lots	
Black Vulcanizable Gutta Percha for plates			\$4.00	\$3.75	\$3.50	
Maroon Vulcanizable Gutta Percha for plates			4.50	4.25	4.00	
Pink Vulcanizable Gutta Percha for coating purposes			4.25	4.00	3.75	
			6.50	6.25	6.00	
Deep Orange Rubber		Per lb.	5 lb. lots	10 lb. lots	25 lb. lots	
20-Minute Rubber for repairing purposes		\$4.00	\$3.50	\$3.35	\$3.25	
Black or Red Flexible or Palate Rubber for lining plates		4.00				
		4.25				
<b>NONPAREIL RUBBER</b>		Per lb.	5 lb. lots	10 lb. lots	20 lb. lots	
New Idea Rubber		\$3.00	\$2.85	\$2.75	\$2.70	
		3.50	3.25			
Rubber Dam, medium, 5 and 6 inches wide			Per yard roll		Per half yard roll	
Rubber Dam, thin, 5 and 6 inches wide			\$9.70		\$1.40	
			2.00		1.00	
No. 1 Weighted Rubber for lower plates	}	Per lb.	5 lb. lots	15 lb. lots	20 lb. lots	
No. 2 Weighted Rubber for upper and lower plates						
Black Weighted Rubber for lower plates						
		\$4.25	\$3.75	\$3.50	\$3.35	

**EUGENE DOHERTY**

110 & 112 Kent Avenue

BOROUGH OF BROOKLYN, N. Y., U. S. A.



## The Rolling Special for pyorrhoea cases.

Particularly effective in cleansing exposed roots and places heretofore inaccessible, especially the lingual surfaces of the lower incisors. A great aid in the home treatment of pyorrhoea. Literature and price-lists on request.

THE  
Rolling Tooth Brush  
Company

Box 173A, Back Bay,  
BOSTON, MASS.

## Stomatitis

which in its acute catarrhal form is so often encountered as a sequence to faulty dental conditions, invariably calls for the use of a cleansing, mildly antiseptic mouth wash, and nothing that the dentist can employ will prove so valuable in every way as

## Pond's Extract

Two to four teaspoonfuls of Pond's Extract to a scant half glass of water, as hot as can be borne, used as a mouth wash every hour or two, promptly relieves soreness, controls inflammation and rapidly stimulates the normal processes of healing and repair. It is absolutely non-poisonous, never irritates and is as pleasant to use as it is effective in results.

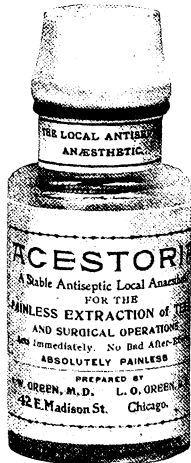
The ideal preparation of hamamelis.

Pond's Extract Co.

London

New York

Paris



## ACESTORIA

NON-SECRET

NON-TOXIC

The Only Local  
Antiseptic Anaesthetic  
of a Proven Quality

Combination Pure  
Action Always Sure

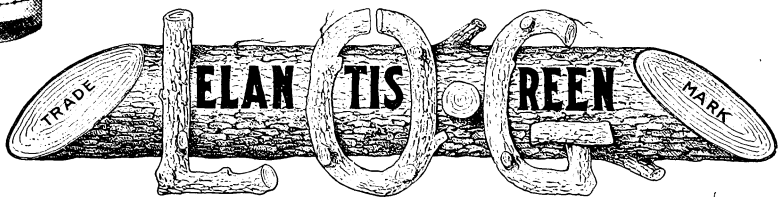
### PRICES

1 oz. bot.	\$0.75
2 " "	1.50
8 " "	4.00
12 " "	5.50

ONE FEELS A CERTAIN  
SECURITY WHEN USING  
"ACESTORIA"

If your dental depot cannot supply you, send your order to us with his name. Endorsed and recommended by thousands of well known Physicians and Dentists

Guaranteed under  
the Food and  
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30, 1906. Guar-  
anty No. 13656



42 East Madison St.

Heyworth Building

Chicago, Ill.



# LENNOX

## NITROUS OXID

— *For* —

## GOLD CASTINGS

**T**HE very valuable and comparatively new process of Gold Casting for Inlay Work is acknowledged to be a great improvement over the older methods of filling, because it produces a much harder gold, with better edges, absolutely prevents a recurrence of caries, and is a great time saver to the dentist.

Gold Casting calls for a pure Nitrous Oxid which, in connection with illuminating gas, permits of a concentrated heat of wonderful intensity. It must fuse gold to its most liquid state, in the quickest possible time, while the investment remains as cool as possible to avoid even microscopical variation.

**The Purer the Nitrous Oxid, the Better the Results Obtained.**

Lennox Nitrous Oxid is submitted to fifteen separate methods of purification before being compressed into the cylinders and is absolutely and chemically pure. It is first passed through distilled water, and then through fourteen chemical reagents.

**No one making their own Nitrous Oxid can undertake to purify it by any such exhaustive methods.** Lennox cylinders are unusually strong, light and handsome, and are provided with valves which work easily and positively, and which are absolutely non-leaking and can be used with any Gold Casting Machine or Blow Pipe made.

Many who have put aside their Gold Casting Machines because they did not supply themselves with a Nitrous Oxid which would enable them to make faultless castings, are finding that the employment of Lennox Nitrous Oxid overcomes all the difficulties and they are enthusiastic over the measure of their success.

Write for Booklet A

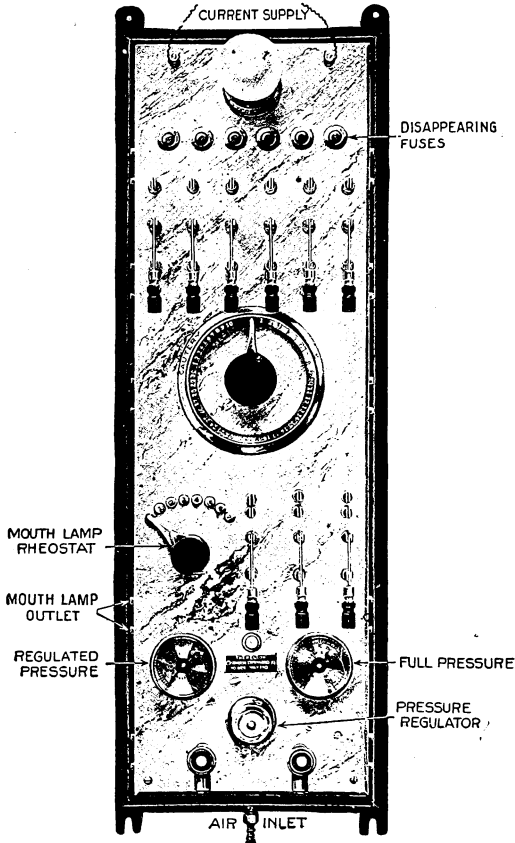
**THE LENNOX CHEMICAL CO.**

Owned and operated by The Bishop & Babcock Co.

1201-1215 East 55th Street, Cleveland, Ohio



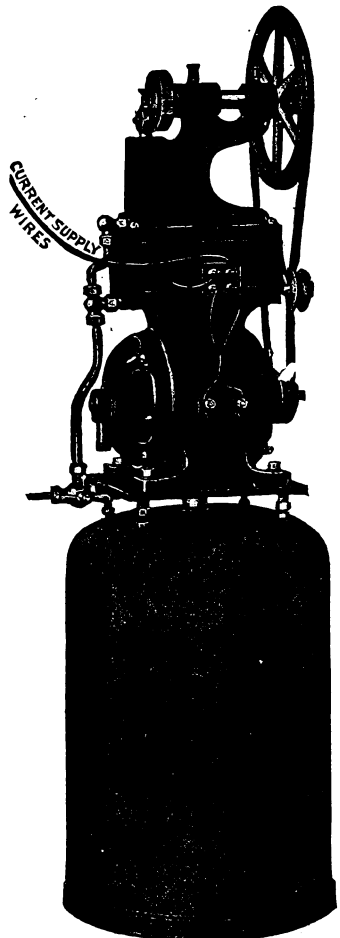




## Accurate Information — and — Guaranteed Results

are important features to be considered in selecting your electrical equipment.

¶ Many purchasers are realizing this and, to meet these requests, we have issued a special circular containing only concise and exact *facts* as to the capacity of the different types and styles of Switchboards and Air Compressors which we manufacture.



¶ The information contained is of real value in showing the relative worth of different priced switchboards.

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ASK FOR "*Types and Specifications*"  
SENT FREE ON REQUEST

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THE PELTON & CRANE CO.  
BEAUBIEN and MACOMB STS.  
DETROIT, MICH. - - - U. S. A.

# SALVITAE AND SALUGEN

## THE CONSTITUTIONAL ELEMENT

Proper appreciation of the importance of the constitutional element in such dental affections as pyorrhea alveolaris and gingivitis is responsible for the wide-spread esteem and employment of

## SALVITAE

Salvitae is of inestimable service in dental affections of constitutional origin, because it corrects those metabolic disturbances which lead to the deposition of salivary and serumal concretions. In consequence of its stimulating influence on the excretory channels, the elimination of the products of combustion is complete.

The remedial action of Salvitae in dental disorders of constitutional origin is, of course, augmented by the conjunctive employment of a local agent capable of effecting oral prophylaxis.

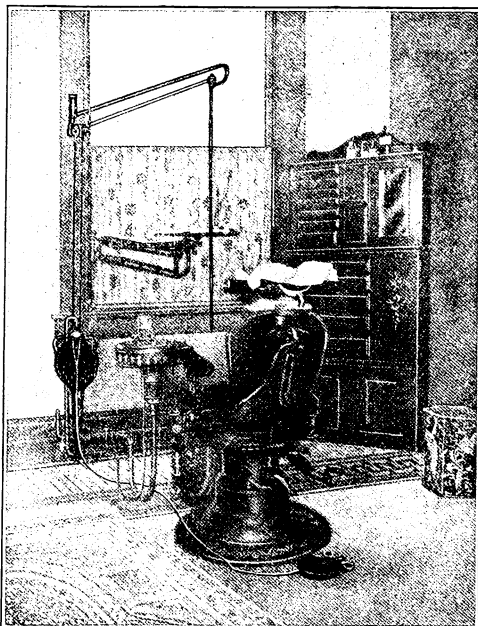
Destruction of pathogenic micro-organisms, prevention of fermentative processes, stimulation of periodontal structures and maintenance of oral prophylaxis is best accomplished by the use of

## SALUGEN

Salugen is an exceptionally powerful and absolutely harmless antiseptic, deodorant, detergent, disinfectant and prophylactic.

LITERATURE AND SAMPLES WILL BE SENT PREPAID, ON REQUEST.

**AMERICAN APOTHECARIES COMPANY**  
ASTORIA, GREATER NEW YORK



**CLASSY:**—We show in this cut our New Foot Switch and Silk Covered Cable, making of the Sims Hydraulic Engine the most classy of the motor dental engines.

We do not show a lot on machinery in the operating room. There is no unsightly derrick hung up on the wall, and there are no expensive, unreliable batteries. No Danger. No Electricity.

Takes nothing but water. Simple, isn't it?

We have new catalog and circulars, with large cuts showing all details of construction.

It is worth while learning about all the New Things whether you want to buy or not.

It will cost you but a postal card to write us, and nothing for what we send you.

Price of Sims No. 2A Cable Engine, with New Foot Switch and Silk Covered Cable . . . . . \$70.00.

**SIMS**  
**HYDRAULIC ENGINE CO.**  
Lancaster, Pa., U. S. A.

# Shallow Palates

Fitted Easily with

## Cast Aluminum Dental Plates



They will not crack, split or break. They are free from air-holes and pits. Molded and cast with the pure metal, highly polished. With undercut rim or flanges for vulcanite attachment. Ready for the bite when you receive them. Just imagine the ease and accuracy with which it can be taken. There is no mouth we can not fit. Write for our circular of information and then send us your next case.

OSCAR BOECK

2233 NORTH SAWYER AVENUE, CHICAGO

**20 YEARS EXPERIENCE**

**PURITY**

**GUARANTEED**

**OHIO NITROUS OXID**

*The Safest Anesthetic*

**CYLINDERS—MODERN IN EVERY RESPECT**

Tested in accord with rules of The Interstate Commerce and Railway Commission

**VALVES—FIT ALL APPARATUS AND CONNECTIONS**

Operate Easily

Include Safety Device

No Leakage

**Compare  
Results**

**PURE**  **GAS**

**Investigate  
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On request we will send without charge articles and lectures on Gas Anesthesia

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**THE OHIO CHEMICAL & MFG. CO., CLEVELAND**

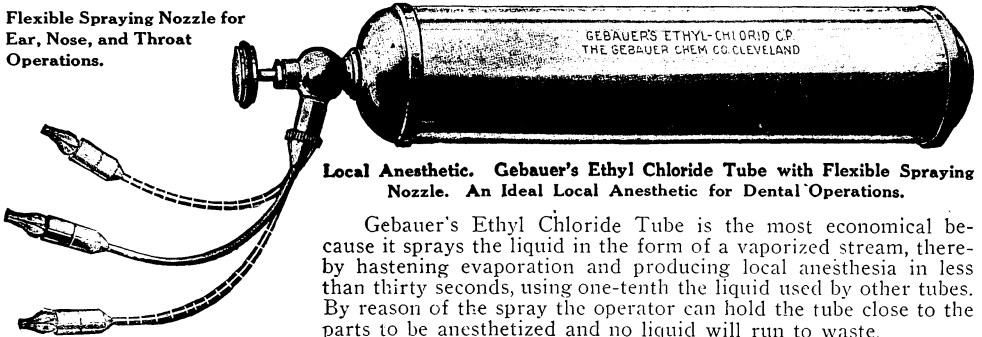


# LOCAL ANESTHETIC

*A New Method of Applying Ethyl Chloride in Dentistry*

No hypodermic needle. No systemic effect. The most economical anesthetic on the market.

Flexible Spraying Nozzle for  
Ear, Nose, and Throat  
Operations.



**Local Anesthetic. Gebauer's Ethyl Chloride Tube with Flexible Spraying Nozzle. An Ideal Local Anesthetic for Dental Operations.**

Gebauer's Ethyl Chloride Tube is the most economical because it sprays the liquid in the form of a vaporized stream, thereby hastening evaporation and producing local anesthesia in less than thirty seconds, using one-tenth the liquid used by other tubes. By reason of the spray the operator can hold the tube close to the parts to be anesthetized and no liquid will run to waste.

The Gebauer tube is the only tube which has a flexible spraying nozzle. This nozzle is made of soft German Silver tubing and can easily be bent to assume any angle, thereby making any tooth in the mouth accessible to the ethyl chloride spray. The flexible spraying nozzle is detachable and will fit all Gebauer ethyl chloride tubes. It can be used indefinitely, and it will therefore be necessary to buy this flexible nozzle only once, as it will fit any subsequent tube purchased.

It is especially recommended for the extraction of teeth, extirpation of dental pulps, obtunding sensitive dentine, or anywhere a local anesthetic is desired.

Sent anywhere prepaid, safe delivery guaranteed, upon receipt of price.

40 grm. tube, \$1.00

100 c.c. tube, \$1.60

Flexible spraying nozzle, 50 cents extra

*For sale at all dental depots or by applying direct to*

**THE GEBAUER CHEMICAL CO., Sole Manufacturers, 6956 Broadway, Cleveland, O.**

## DOCTOR!

## USE

# "KELENE"

## ?

## ASK

Sole Distributors for the United States

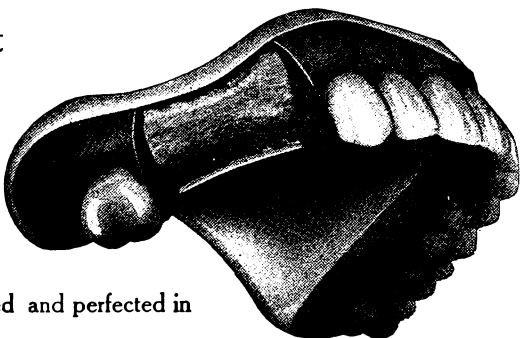
## MERCK & CO.

NEW YORK

RAHWAY

ST. LOUIS

# At Last--The Perfect CAST Aluminum Plate



Our own exclusive Process, invented and perfected in our own laboratory.

We guarantee an exact replica of your original model, and return your model uninjured with the Finished Plate, so that you may personally verify correct cast in every case. Chemically pure Aluminum only used.

Our 14 years experience in high-class Prosthetic Dentistry enables us to wax up and finish Cast Aluminum Plates in a superior manner.

We do not tolerate mediocre work in any department of our laboratory.

A rim and flange makes absolutely secure and durable the adhesion of the vulcanite attachments.

Plates are light, strong, enduring and have no equal as a thermal conductor.

Command a high price, without material increase in cost or time. An unqualified success.

Cast Aluminum Plates are adapted to all cases where the ordinary plate can be used.

Prices upon application. Dental profession only.

## L. D. HURST, Prosthetic Dentistry

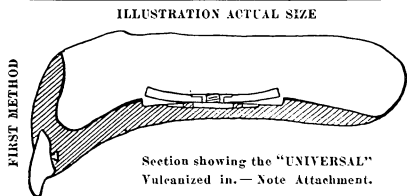
Laboratory, 619 Mack Block  
ESTABLISHED 1896

DENVER, COLORADO

P. O. Box 1464

# Dr. Fred A. H. Olsen's UNIVERSAL SUCTION

(PATENT APPLIED FOR)



PRICE: BOX of SIX for \$2.00

While UNIVERSAL SUCTIONS can be Vulcanized in Old or New Plates Easier than any other Suctions Made, the Simplest way to insert them is WITHOUT VULCANIZING

They are easy to insert in GOLD, ALUMINUM and other METAL PLATES

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SOLD BY ALL DEALERS AND BY

## OLSEN DENTAL SPECIALTY CO.

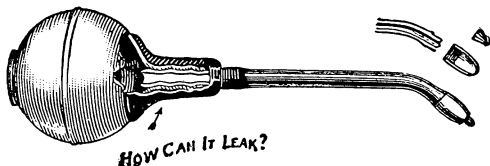
(Dept. I) 2439 Armitage Ave. CHICAGO



## MEDICINE DROPPER

For all kinds of fluids used by a dentist. Send for one, and then fit up your cabinet. Price, 40 cents.

1561 Broadway



## QUICK FILLING SYRINGE

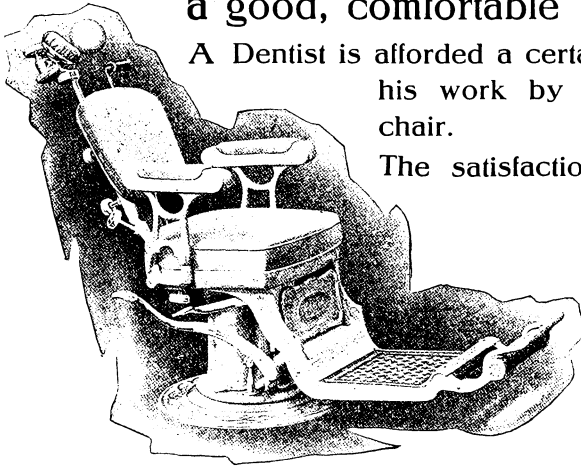
Fills right up in five seconds. Made of hard rubber, with a metal tip. All the parts interchangeable. Price, \$1.50.

## F. B. SPOONER

Brooklyn, N. Y.

# HARVARD

**COMFORT**—All humanity is striving for it.  
**YOUR PATIENT** will recognize and appreciate  
 a good, comfortable *Dental Chair*.

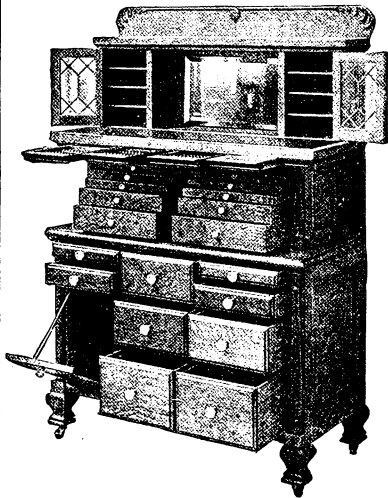


A Dentist is afforded a certain degree of comfort in his work by the convenience of his chair.

The satisfaction gained on the part of Dentist and Patient more than equals the small investment in a

**Harvard No. 60**

The beauty in design of a **HARVARD No. 80 Cabinet** adds to the appearance of an office, and is well worth a slight difference in *cost*, for its quality and convenience to you.



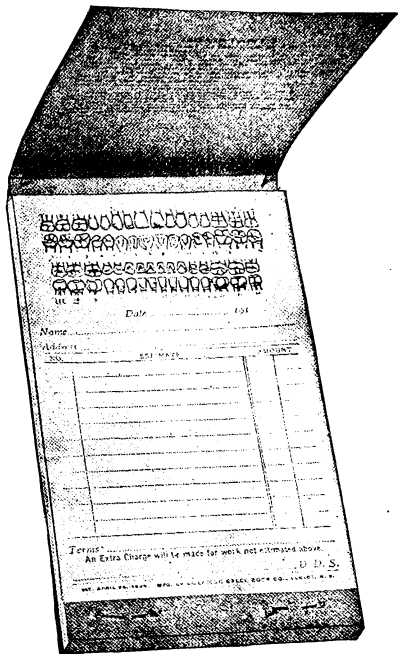
We put in a sterilizer instead of the large mirror for \$10.00 extra, if you prefer it that way.



*Send for catalog and ask  
 about our liberal terms or  
 cash discount.    :: :: ::*

**HARVARD CO., Canton, Ohio**

## A BOOK THAT PROTECTS YOU



☐ The "Federal" Duplicating Estimate Book will eliminate all questions as to charge you make.

☐ A unique, patented book showing by diagram, work to be done, prices and terms made, etc. You keep original copy; patient gets the duplicate.

FOR ONE BOOK, . . . \$ .25

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☐ These books also are part of the "Federal" Dental System.

☐ Our Dental System will interest you. Ask for samples of Record Cards, Follow-up System, etc.

## Federal System Co.

761 Schiller Bldg. :: Chicago

## The Best Treatment for Gingivitis and Pyorrhea

*First*—Put your patient on Sodoxylin to combat the thing "at the bottom of the trouble—acidemia." You cannot ignore this basic defect and get results. For the oral mucus and saliva become highly acid and lose their natural protective powers when bacterial poisons are absorbed from the bowel. Sodoxylin will eliminate the waste matter in which they breed; neutralize their acidity; and check their formation.

*Second*—Apply Iodoglycerole to the gum tissues twice a week. The inflammation is usually deep-seated (extending even into the alveolar process) and iodine (in glycerine with zinc iodide) penetrates best and is followed by most satisfying results.

*Third*—Instruct your patient to use Gum Wash daily—the dentifrice that really stops decay and preserves the teeth. It is a hydro-alcoholic solution of zinc sulphocarbolate, pleasantly flavored, and ought to be used with Dr. Talbot's special gum-massage brush. It destroys the bacteria in the mouth, and stimulates and contracts the gums.

*Send for our booklet describing these preparations in full and others of equal value to the practising dentist.*

## The Abbott Alkaloidal Co.

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Seattle

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# VELVO SPECIALTIES

SEND FOR FREE SAMPLES OF

VELVO ROOT FILLING AND TREATMENT—FOR PERMANENT ROOT FILLING . . .	\$1.00
VELVO DEVITALIZING FIBRE—WILL PAINLESSLY KILL PULPS . . .	1.00
VELVO CAP—USED FOR PULP CAPPING AND TEMPORARY STOPPING . . .	1.00
VELVO SEDATIVE FIBRE—INSTANTLY CURES TOOTHACHE FROM EXPOSED PULPS . . .	.25
VELVO BORO—AN ANTISEPTIC SUCTION POWDER FOR ARTIFICIAL DENTURES, SORE MOUTHS AND CANKER SORES, ETC. . .	.50

SOLE AGENTS IN UNITED STATES AND CANADA

FOR

## BRILL'S PLASTIC PORCELAIN FILLING

AN ENTIRELY NEW DEPARTURE

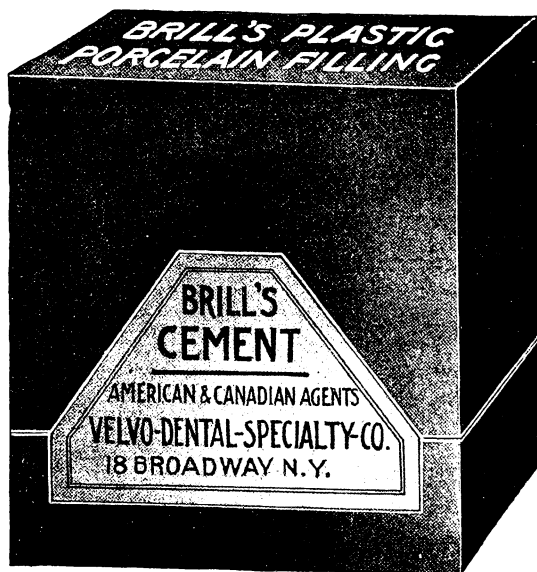
Imported from Germany and sold only in original packets.

The only true plastic porcelain on the market. Can be used with equal success for cement filling and porcelain work.

- No. 1. White
- No. 2. Ivory White
- No. 3. Light Yellow
- No. 4. Yellow
- No. 5. Light Grey
- No. 6. Pearl Grey
- No. 7. Brown
- No. 8. Light Green
- No. 9. Light Rose
- No. 10. Dark Rose

### PRICES

Large packets, 1 powder,	
1 liquid - -	\$5.00
Small packets, 1 powder,	
1 liquid - -	3.00
Assorted packets, 4 pow-	
ders, 2 liquids -	16.00
Assorted packets, 4 pow-	
ders, 2 liquids -	10.00



SEND 25c. DIRECT TO US (V. D. S. CO.) FOR LIBERAL SAMPLE

Your money refunded if our specialties do not give you perfect satisfaction in every particular.

FOR SALE BY DENTAL SUPPLY HOUSES OR DIRECT FROM

VELVO DENTAL SPECIALTY CO., 18 Broadway, New York City

Incorporated in March, 1905, under the laws of the State of New York



# When You Drill Into a Dead Tooth

think of Improved Co-Arda. It's the only abscess remedy that will give you perfect success every time. Any abscess will yield with from one to three treatments. Improved Co-Arda not only takes away most of the disagreeable work in treating abscessed teeth by its quick and powerful action, but it also insures an absolute cure.

## IMPROVED *Co-Arda* Powder-Liquid-Points

*REMEMBER that Improved Co-Arda is the only combination abscess cure and permanent root-filling in existence. There is nothing just as good. There is nothing like it. It is absolutely in a class by itself.*

Every package contains one bottle of Powder, one bottle of Liquid, one box of Co-Arda Points. Sold and guaranteed by every dental dealer in the United States.

The Co-Arda Company

Scranton, Pa.



# Do You Know What The Fellowship Guarantee Means ?

¶ It means that every ounce of FELLOWSHIP ALLOY sold by us to your dealer is guaranteed by us to him and by him to you.

¶ It means that if after you have tried it you are not satisfied that it is a better alloy than you have ever used, you can return it to him and he will cheerfully refund to you the purchase price.

¶ If you are using FELLOWSHIP this guarantee means nothing to you, as you know its worth, but if you are not using it order a package from your dealer to-day and find out to your entire satisfaction that FELLOWSHIP ALLOY has perfect edge strength, no contraction, and 1/20,000th of an inch expansion, making an alloy which if properly manipulated will make a filling that can not be improved upon.

## LEARN TO SAY FELLOWSHIP

Manufactured by

THE DENTAL PROTECTIVE SUPPLY CO.

2231 Prairie Avenue

- - - - -

Chicago, Ill.

ALL DEALERS

# BE A DENTONE DENTIST

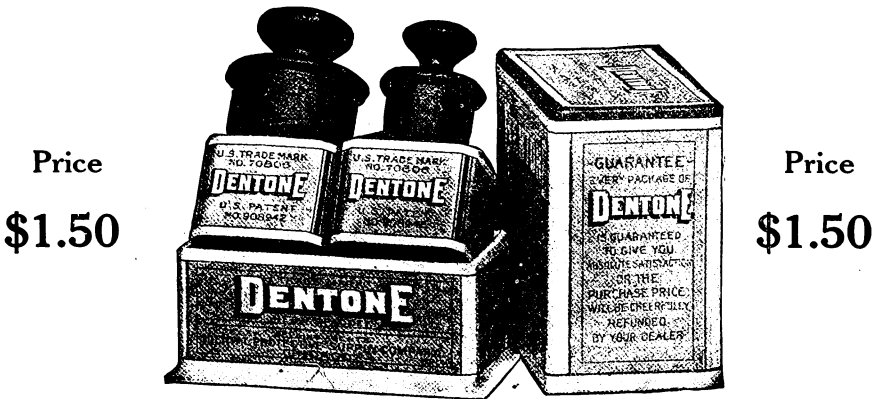
Which means that hereafter you will use **only DENTONE** for the treatment of all blind and fistulous abscesses and as a permanent root canal filling.

## DENTISTS FROM EVERYWHERE

are writing us about their success in the use of **DENTONE**. We sent them samples of **DENTONE** first—and then they supplied themselves through their regular dealers. We'll send **you** a working sample of **DENTONE** on request. And later, in buying **DENTONE**, accept our assurance that **DENTONE** is the only Oxygen Abscess Treatment ever offered.

Our dealers are instructed to refund money on request if **DENTONE** does not meet the entire approval of the Dentist using it.

### HERE IS THE PACKAGE



If you have not used a working sample, allow us to mail you one at once—it will go to you as soon as we receive your letter.

## Dental Protective Supply Company

2231 Prairie Avenue :: :: CHICAGO, U. S. A.

# Multiplying Results by 2

---

- ¶ A man rarely accomplishes more than he sets out to accomplish—usually it is a little less.
- ¶ If he buys cheap tools and materials the results are bad—because he expects little from them and, therefore, puts little pains and effort in his work.
- ¶ It is rare that anyone gets from his labors results better than he anticipates.
- ¶ There are hundreds of dentists who regard all cements as temporary and unsatisfactory; and they manipulate these materials accordingly.
- ¶ Almost any dentist could take the cement he is using, and by careful cavity preparation, proper mixing and manipulation and an observance of the details which theory and practice have proved sound, multiply the results he is getting by 2.
- ¶ In other words, every dentist should expect more of his dental cement and then give it a chance to demonstrate its utmost possibilities.

---

**THE L. D. CAULK COMPANY**

# Multiplying Results by 4

---



---

- ¶ If you will watch the man who is using a cheap, crude dental cement you will observe that he manipulates it indifferently, prepares the cavities hurriedly and inadequately—he does not expect much from it anyway.
- ¶ Such a man may instantly multiply the results of his cement work by 4. First he should get the best cements; they should at least be three in number to meet the requirements of the several classes of operations to be performed.
- ¶ He should get Caulk's Petroid Cement Improved for fillings; Caulk's Crown and Bridge and Gold Inlay Cement for the special lines of work for which it is made; and Caulk's Copper Cement for a number of operations for which it is peculiarly adapted.
- ¶ He should use each of these cements when indicated, following the manufacturers' suggestions carefully and exercising his highest skill in each operation.
- ¶ In most instances this would result in multiplying the efficiency of cement work by 4.

---



---

**THE L. D. CAULK COMPANY**

# FREE SAMPLE

—OF—

IMPROVED

## Ascher's Artificial Enamel

—AND—

a beautiful shade guide, liquid and powder measures, and latest literature will be sent on receipt of 25 cents in stamps to cover packing and postage. Send at once before the supply is exhausted.

**PINCHES DENTAL MFG. CO.**

**The Pinches Dental Mfg. Co.**

1181 Broadway, New York City

Enclosed find 25 cents in stamps to cover packing and postage on a trial package of **Ascher's Artificial Enamel (Improved)**, one porcelain shade guide, powder and liquid measures, and literature.

Name.....

Address.....

Dealer's Name.....

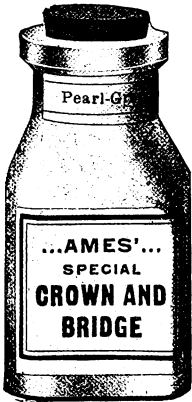
# WHERE DOCTORS AGREE

is in regard to the unrivaled excellence of Ames' Cements. The Ames' policy of perfection in production has been so faithfully adhered to that, in the Dental profession, it may fairly be said that First Quality and Ames' Cements pass as synonymous terms.



Our \$1.50 Size

## AMES' SPECIAL CROWN & BRIDGE AND SPECIAL INLAY CEMENTS



Our \$3.00 Size  
Note Our New Style Bottles

☞ All tests prove the superiority of these Cements in imperviousness, absence of shrinkage and expansion, and resistance to attrition. They are positively hydraulic, setting best subjected to moisture during the setting process.

☞ Do you know of any other cements that are dependable in these qualities?

### Note this significant fact:

The precision of our laboratory processes and the resultant quality of products, lead to our cements being the one selected by imitators, who audaciously go so far as to use the words "Ames' Formula" on their labels. The imperfections of such spurious materials, concocted by persons who can not originate a formula, impose only on the over-credulous—those seeking mere cheapness are indifferent.

## AMES' <sup>process</sup> <sub>New</sub> Oxyphosphate of Copper

is the only real copper oxide cement made. The most used, the most effective in arresting tooth decay, and in the treatment of sensitive teeth. Nothing like it—least of all the zinc imitations.

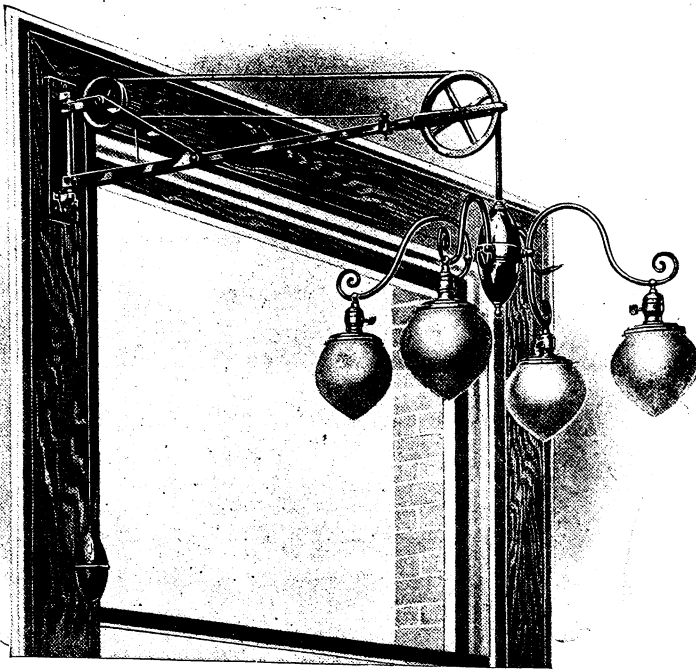
*The Dentist who has not tried the Ames' Cements  
has a pleasing experience yet before him*

**ASK YOUR DEALER IF THAT IS NOT SO**

*The* **W.V.B. AMES**  
**COMPANY**

Distributors

151 WABASH AVE. : : CHICAGO



ADJUSTABLE  
ELECTRIC  
LAMP  
AND  
BRACKET



This is the only form of Dental Lamp giving a strong, clear, white light.

Work can be done in any position without obstructing the light.

You do not have to focus it at a certain point.

It can be raised or lowered by a slight touch, or moved from side to side.

It distributes a light of 150-candle power. Can be used on direct or alternating current.

Our regular fixture is supplied with the globes closer together than shown in this cut.

Price Complete	{ Copper Oxydized	-	-	-	-	\$35.00
	{ White Enameled	-	-	-	-	40.00
	{ Silver Oxydized	-	-	-	-	45.00
Electric Dental Suspension Engine		-	-	-	-	95.00
Electric Laboratory Lathe		-	-	-	-	35.00

*Write for Circulars*

*Order from your dealer*

**Trenaman Dental Manufacturing Company**

**114 Maiden Lane, New York**



# The Original Zinc Chloride Preparation

Heals the  
Diseased  
Tissues

Preserves a  
Healthy  
Condition



One from

Thousands

“Lavoris gives me the results I want and as it is so attractive to my patients I am gladly recommending it.”

# The Perfect Dentifrice

**What should the perfect dentifrice accomplish?**

It should thoroughly cleanse the teeth without erosion.

It should destroy the acid forming microbes and not simply temporarily neutralize the acid itself.

It should destroy the microbes which assist in the formation of tartar, thereby hindering its accumulation.

It should disinfect the whole mouth so that colds, Influenza, Tonsilitis, Bronchitis, Diphtheria and Pneumonia no longer constitute an imminent danger upon trivial exposure.

All this should be done without injury to the hard or soft tissues.

**Kolynos** has been proved to accomplish this.

Send for free tube and convincing scientific proof.

---

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## The Kolynos Company

180 Meadow Street	-	-	-	-	-	New Haven, Conn.
4 Farringdon Avenue	-	-	-	-	-	London, England
10 Rue de la Chaussee d'Antin	-	-	-	-	-	Paris, France
5 Raecknitz Strasse	-	-	-	-	-	Dresden, Germany

**LOOK AT IT THIS WAY:  
THE PROFESSION IS  
ADVANCING—ARE YOU?**

Combine your professional with your mechanical knowledge and use a metallic lining on your vulcanite dentures; avoid heated and spongy gums and general unsanitary conditions of the oral tissues by using

**THE ROSCINIAN LININGS**

The Roscinian 24 K. all gold Lining  
\$3.50 per Pkge. (1 upper denture)

The Roscinian Felt Aluminum Lining  
\$2.00 per Box (4 upper dentures)

Directions are simple. No accessory tools to buy. No chance results,—we do the experimenting.

For sale at your dealer's or address direct.

Any special lining made  
to order if practical.

All correspondence answered.

**THE ROSCINIAN CO.**

7703 Woodland Avenue  
CLEVELAND, OHIO

*It is  
a matter of  
health*

**R  
SANITOL**

TRADE MARK  
BEST FOR THE TEETH

Liquid,  
Powder,  
Paste, Brush,  
Children's Brush.

*There is no sub-  
stitute.*

**The Evils of Chronic Constipation**

are constantly evident to the dentist. The correction of intestinal torpor is absolutely essential in establishing healthy conditions of the teeth, and no remedy is so serviceable for the purpose as

**PRUNOIDS**

(EDIBLE TABLETS)

Under the use of this eligible preparation the bowels are promptly regulated without the slightest discomfort or distress. Not only is elimination secured, but the mucosa and glandular structures are stimulated to normal activity.

The benefits from the use of Prunoids have a permanence, therefore, that is seldom if ever observed from ordinary cathartic measures. Samples on request.

**THE SULTAN DRUG CO.**  
ST. LOUIS, MO.

SOLD BY DRUGGISTS

## My Abscess Mixture

(Non-Secret)

A Specific for putrescent conditions of the teeth. As a last resort, after everything else fails, try my

### Abscess Mixture at my expense

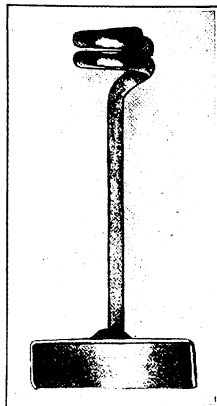
One *FULL SIZE DOLLAR PACKAGE* for *TWENTY-FIVE CENTS* to cover cost of packing and postage, if you mention this paper and give your dealer's name.

## Dr. Fell's Waxed Tape

The very best material for separating teeth, and the least painful.

Price, 25 Cents

## Dr. Fell's Dental Guard



Will Fit any  
Handpiece

Prevents the laceration of the tongue and cheek in grinding posterior teeth for crown and bridge work.

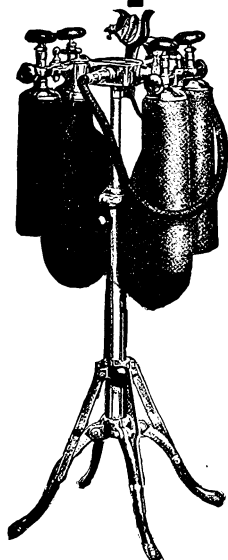
Price  
75 cents

If you don't buy one, it's your loss.

*Order from your dealer or we will  
mail direct on receipt of price*

**BYRON M. FELL**

Doylestown, Pa.



## The Teter Apparatus

THE TETER APPARATUS No. 2 is the most scientifically developed and thoroughly equipped apparatus for the administration of Nitrous Oxide and Oxygen ever invented.

¶ There is no guess work with the Teter Apparatus. Results are absolutely sure and certain.

¶ Continued anesthesia is as easily maintained with the Apparatus and Nasal Inhaler as it is with the Apparatus and Face Inhaler.

¶ Most dentists are familiar with what can be done during the analgesic stage as produced with the Teter Apparatus and many are eliminating pain entirely from all their dental work by this method.

¶ Give Nitrous Oxide and Oxygen WARM to obtain a perfect and safe form of anesthesia which is not accompanied by nausea or other bad after effects.

¶ The TETER APPARATUS is being used by hundreds of dentists and is considered by them as being the greatest practice builder in their offices.

¶ For literature and further particulars write us.

*Best results obtained only  
when using Teter Nitrous  
Oxide and Oxygen with  
the Teter Apparatus.*

**THE TETER MANUFACTURING CO.**

WILLIAMSON BUILDING

CLEVELAND, OHIO

*Alvesol*  
*Gilbert*

**A full package at half price for a limited time**

So that we may quickly place this **specific for putrescent and abscessed teeth** in the hands of the profession, we will sell it at half price, viz.,

**75c. until January 1st, 1911.**

After that, the regular price of \$1.50 will be maintained.

Your dealer will supply you at the reduced price, during the time mentioned, or we will mail it anywhere in the United States, Canada, Cuba or the Philippines, on receipt of 75c.

*J. Eldred Gilbert*

**1627 Columbia Ave., E. B.  
Philadelphia, Pa.**

**ERGOAPIOL (Smith)**

For  
**AMENORRHEA  
DYSMENORRHEA  
MENORRHAGIA  
METRORRHAGIA  
ETC.**

ERGOAPIOL (Smith) is supplied only in packages containing twenty capsules.

DOSE: One to two capsules three or four times a day. < < < <

SAMPLES and LITERATURE SENT ON REQUEST.

MARTIN H. SMITH COMPANY, New York, N.Y., U.S.A.

**Greene Brothers'**

CLINICAL COURSE IN

**Dental Prosthesis**

IN

**Three Printed Lectures—Just Out Illustrated**

**New and Advance-Test Methods**

IN

**Impressions, Articulation, Occlusion,  
Roofless Dentures, Refits and Renewals**

**By JACOB W. GREENE**

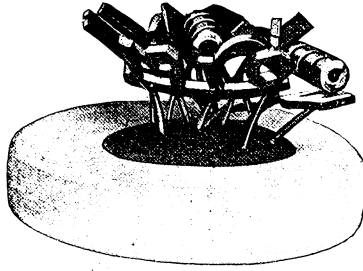
Chillicothe, Mo.

1910

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Printed Course, \$10.00. Verbal, in Class, \$25.00

**Send For Circular**



## Fifteen Objects Mounted, Invested and Cast at One Operation. The Elgin Did It.

**I**N THE ASTONISHING PROGRESS made by prosthetic Dentistry during the past few years, including the many short-cuts revealed by the development of modern casting methods, the

### Elgin Vacuum Casting Appliance

has played a leading part and a winning one. In thousands of offices—in most offices where the casting art is extensively practiced—the Elgin daily renders beneficent and profitable service. Its use has become almost universal in the laboratories of progressive dentists.

In the hands of the expert casting man, it has supplanted all other appliances; with its help he can accomplish anything that he cares to attempt.

For the beginner it has simplified the process, and reduced it to a rational procedure, insuring success.

To the conscientious, overworked practitioner it has brought relief to body, brain and nerve, enabling him to render the best possible service with the minimum of effort.

The Elgin is adaptable to every phase of casting: Plates, Crowns, Bridges, Inlays; handling each with equal facility and satisfactory results.

Illustrations on this page show some rather remarkable products.

We shall be glad to tell you more about the Elgin and its capabilities on request.

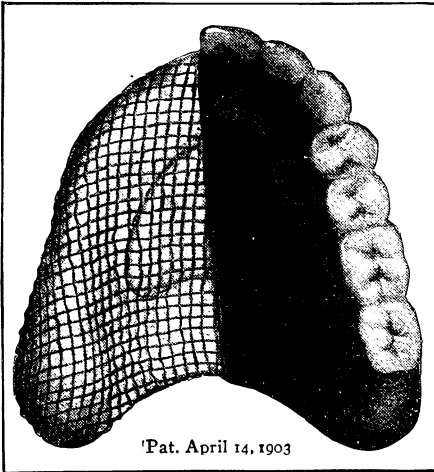
*The Ransom & Randolph Co.*  
CLEVELAND TOLEDO GRAND RAPIDS



The Fifteen Pieces shown mounted above.

IF YOU WANT **THE** BEST SPECIAL WORK  
 AND THAT **ONLY,** WHY GO  
 MILES OUT OF YOUR **WAY** THERE IS JUST ONE

PLACE WHERE ALL SPECIAL WORK IS  
 DONE WITH A CAPITAL S AND THE SAME GOOD  
 OLD CAPITAL S STANDS FOR  
**SUPPLEE'S SEPARABLE SANITARY SECTION**  
 A REMOVABLE GUM FOR DENTURES, THAT MAKES  
 DIFFICULT SPECIAL BRIDGE  
 WORK AN EASY PROBLEM  
 TO SOLVE.

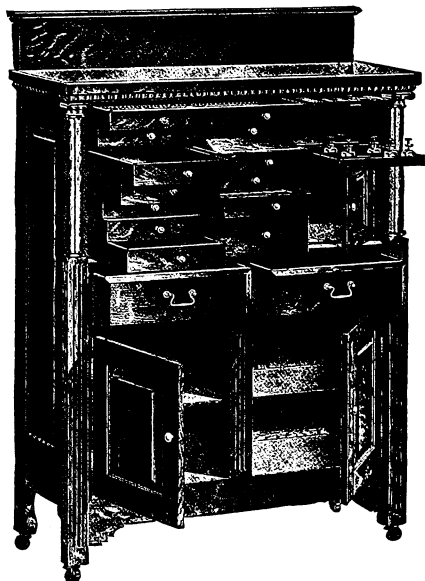


PERFECTION PLATES  
 BENNETT BAR BRIDGES  
 LINGUAL BAR  
 LOWER PLATES  
 CROWNS AND REGULAR  
 RUBBER and GOLD PLATES

ARE MADE CONTINUALLY AND  
 CORRECTLY BY

**SAML. G. SUPPLEE & CO.**  
 874 BROADWAY NEW YORK

# The Question of Quality



IT is always poor policy to buy an article of inferior quality. And it is especially so when the article is one that is to be used for a number of years.

¶ If a dentist who appreciates how much a modern cabinet would be worth to his practice does not feel that it is wise for him to invest in an expensive one, his best plan is to buy one which is less elaborate, but of the same quality of construction.

¶ The low style Cabinet, illustrated above, is just as well made and well finished as our more expensive

Cabinets. That means that after years of constant use it will continue to give just the same satisfactory service.

¶ The wood of which it is built is so thoroughly seasoned, and the Cabinet is so carefully constructed, that there is no danger from shrinking or warping.

¶ We manufacture Reception Room Furniture and a Desk built especially for a Dentist.

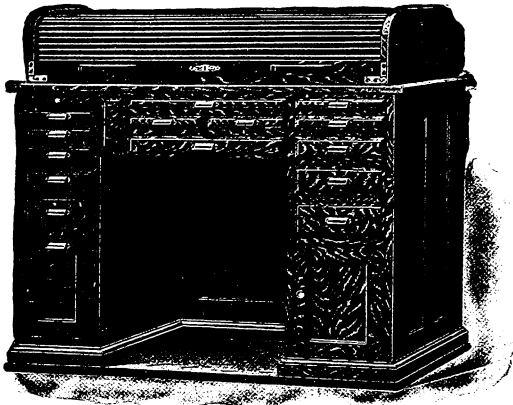
¶ You can purchase our Operating Room, Reception Room, and Laboratory Furniture together with a Chair, Fountain Cuspidor, Engine, Lathe, etc., and in short, a complete outfit on one contract on easy monthly payments. ♡ ♡ ♡ *Shall we send you our catalog?*

## THE AMERICAN CABINET COMPANY

TO INSURE PROMPT } DENTAL DEPT. :: :: :: TWO RIVERS, WIS.  
ATTENTION, address }



# You would like this Cabinet



FOR the Dentist so interested in his work that it is a pleasure to do every part of it as perfectly as possible, the convenience of the mechanical cabinet illustrated will be most thoroughly appreciated.


As it is intended for use in the operating room its finish is the best. In its arrange-

ments it is very complete, being adapted for gold work, for plaster work, and for vulcanite work.

Just a few of the advantageous features of this cabinet are its roll curtain which entirely disappears at the back, its end wings, which open flush with working surface, its convenient gold filing drawer and drawer for gold plate, solder, etc., its tooth drawers, its plaster bin; its drawer for waste connected by metal chute from working surface, its cupboard for bellows, and the convenience of its numerous drawers divided for all tools and supplies.

It is piped for gas and air, and a marble slab 10 x 18" is set into working surface.

There is room beneath the roll curtain for an electric lathe and if a foot power lathe is used, the belt passes between the left hand tier of drawers and the center drawers.

Our new catalog describes a large variety of furniture for the operating room, the laboratory and the reception room. Better send for it. 

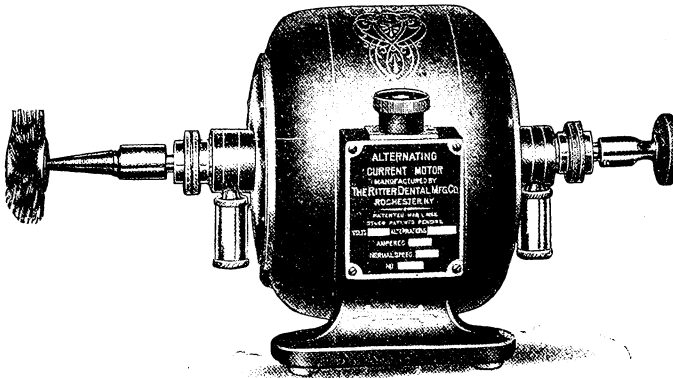
## THE AMERICAN CABINET COMPANY

TO INSURE PROMPT } DENTAL DEPT. :: :: :: TWO RIVERS, WIS.  
ATTENTION, address }

COLUMBIA

## Does it make any Difference

To you what kind of prosthetic work you do?



¶ It does to most dentists, for no matter how much work some of them may have done outside, they take pride in doing their own work as well as they can, especially those dentists who use Columbia Electric Lathes.

¶ With our Electric Lathe in a laboratory there is no tendency to shirk a piece of work because the body is tired, for there's absolutely no physical effort required and consequently a man can do twice or three times as much work at far less cost and with infinitely better results than is at all possible with one lathe worked by foot power which just about takes all the strength a man has and leaves him nothing.

¶ What is there in this kind of an existence for any progressive dentist?

¶ Five dollars a month will put the highest type lathe in your laboratory and 'twill earn four times that amount, at least, every month. ¶ You know it would pay you, don't you?

¶ Put your order in to-day through your dealer and see how much better you feel all around.

### THE RITTER DENTAL MFG. CO.

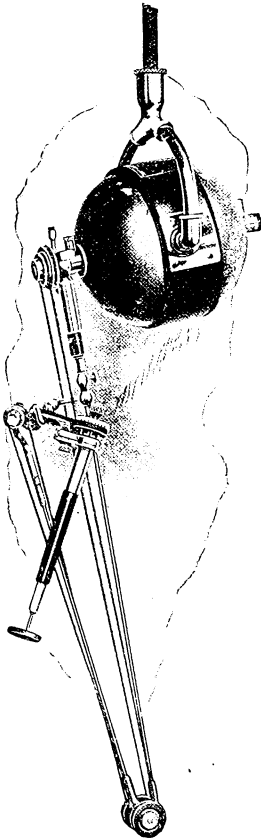
ROCHESTER, N. Y.

47

COLUMBIA

# YOU WON'T KNOW

How much more work you can do and  
how much better you feel  
until you get a Colum-  
bia Electric Engine.



¶ Life is too short at its longest to hasten its close by using more energy and nerve force than you have to.

¶ Get one of these Electric Engines now, before the real warm weather sets in, and then at the end of the day you'll feel more like enjoying yourself by going out somewhere for a walk or ride, instead of sitting home to renew your spent strength.

¶ Remember, it only takes a small cash payment to secure it and the balance can be paid monthly.

¶ Send for catalog.

THE RITTER DENTAL MFG. CO.

ROCHESTER, N. Y.

## How Do You Sterilize?

The Dr. Stamper Combined Sterilizer, Water & Spray Heater, presents the best, easiest and most efficient method known.

Try it at our risk.

Made in white enamel or nickel and for use of either gas, alcohol or electricity.

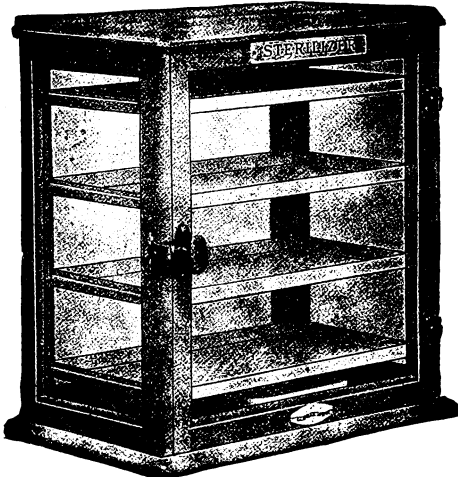
Talk to your dealer or write to us for particulars.

Paducah Sterilizer Mfg. Co.,  
Incorporated,  
Paducah, Ky.

## SUPERIOR CABINET STERILIZER

THE GERMICIDE  
FUMES STERILIZER

No Water, No Heat, No Steam, No Gas, Electric or other connection. No Trouble.  
The Cabinet can be placed in any part of your office and requires no watching.



(Patented) Class G, \$10.00

THESE CABINETS are finely finished throughout, making them an attractive addition to your office furniture. Are regularly finished in different shades of Oak and White Enamel, and other finishes when required. They are supplied with perforated sanitary trays, and the cost of operation will not exceed three or four cents a week.

They are made regularly in five different classes and two different styles. Style No. 1 is made with glass-paneled sides and back and glass panel in door. Style No. 2 is made with glass-paneled sides and glass panel in door, with solid back, metal lined and enameled. All Cabinets are trimmed throughout with polished brass. When ordering, always mention Class, Style and Finish wanted.

### Specifications

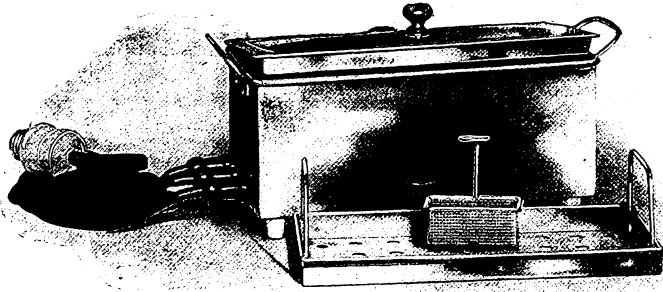
- Class B—5 Steel Trays and 1 Glass Bur Dish.
- Class C—5 Steel Trays and 1 Glass Bur Dish.
- Class G—4 Steel Trays and 1 Glass Bur Dish.
- Class E—3 Steel Trays and 1 Glass Bur Dish.
- Class F—2 Steel Trays.

For further information apply to your dental dealer, or send direct to the manufacturers for Booklet showing variety of styles and sizes.

ERIE CITY MANUFACTURING CO., Manufacturers  
Dept. "D," ERIE, PA., U. S. A.

The  
**BEST**  
Electric  
Dental  
Sterilizer

No. 430



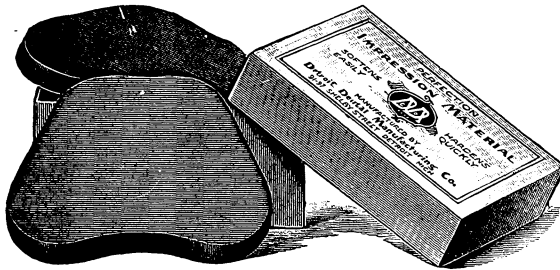
**BECAUSE** IT IS DESIGNED TO MEET THE SPECIAL NEEDS  
OF THE BUSY PRACTICAL DENTIST.  
LARGE TRAY FOR OTHER INSTRUMENTS AND A  
SMALL SILVERED BASKET FOR BURS, ETC.  
FINISH IS POLISHED COPPER OR NICKEL PLATE.  
COVER HINGED—EBONY KNOB TO TAKE HOLD OF.  
SIMPLE—DURABLE—PROMPT IN OPERATION.

ASK YOUR DEALER, OR

THE PROMETHEUS ELECTRIC COMPANY, 230 E. 43d St., NEW YORK CITY

**Kerr Perfection Impression Compound**

**SOFTENS  
EASILY**



**HARDENS  
QUICKLY**

**IT IS IMPOSSIBLE TO MAKE GOOD WORK WITH A POOR IMPRESSION**

**Kerr Perfection Impression Compound**—Takes a clean cut, sharp impression, showing every detail with accuracy. Softens at a low temperature. It hardens quickly and evenly in the mouth, becoming very hard, and does not warp or creep.

A perfectly fitting plate can be made from a Perfection Impression where other means have failed.  
**Kerr Perfection Impression Compound (Sticks)**—This is a very convenient form where a small quantity of Compound is to be added or traced quickly on an Impression.

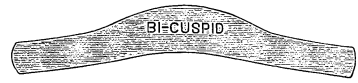
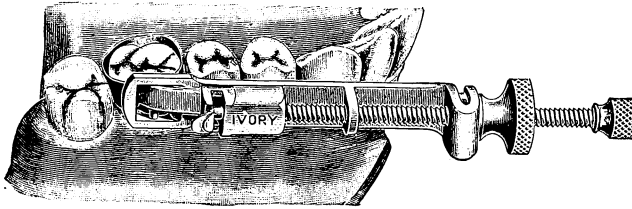
It is also used for taking Impressions of Cavities for inlay work.  
**Kerr Perfection Impression Compound (Wafers)**—This form is a very thin sheet about the thickness of light cardboard. It is very convenient to spread over a surface to add slightly to its thickness. It can be softened very quickly.

Price, Per Box, 50 Cents (All Styles)

Manufactured by the

**DETROIT DENTAL MANUFACTURING CO.,** Detroit, Michigan, U. S. A.

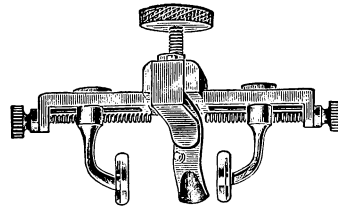
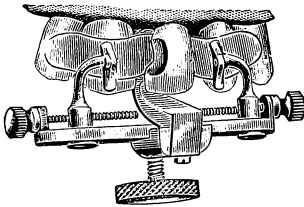
# Ivory Band Matrix No. 8



This Matrix Retainer reaches well back on the side of the alveolar arch, and the band makes a complete circle of the tooth. It is especially serviceable when an entire crown is to be built up or a wax impression made for an inlay (celluloid bands may be used for this work) and with the retainer in position the teeth may be closed and the correct occlusion obtained.

Price, each, with 1 dozen bands	-	-	-	\$3.50
Extra bands, per dozen	-	-	-	.25

# Ivory Anterior Matrix No. 6



The two labial arms of this matrix retainer are adjustable, and a three-point contact is obtained by the palatal jaw and the levelling face on the labial arms, giving the greatest possible hold to be obtained on the anterior teeth, and independent of the band. A screw in the palatal jaw presses the band against the tooth where it is most needed, and gives support against the impact of the filling.

Price, each, with 1 dozen bands	-	-	-	\$3.50
Price, bands, per dozen	-	-	-	.25

*Buy of  
Your Dealer*

**J. W. IVORY, 21 N. 13th St.  
PHILADELPHIA, PA.**

# DO YOU MAKE, SELL OR ADVOCATE CROWN and BRIDGE WORK?

It is a significant fact that we are frequently asked to exchange all kinds of so-called Crown Outfits, for the

## Sharp Seamless Crowning System

Too many would-be inventors, or promoters, have tried to do business on the success acquired by the Sharp Outfit. They have tried to imitate our system as far as they could, which isn't far, but the dentist who has money enough to afford such substitutes is unusual.

### **Better Buy Once And Buy Right**

*Don't forget* that the Sharp System of Crown Work is distinctive, complete, and practical; that its distinctiveness is because of its original features, that *cannot* be imitated.

**If you have an old Crown Outfit of any kind, whether in good order or not, or especially if you have no Crown Outfit, write us.**

We have a proposition for you.

**THE W. M. SHARP CO. - Binghamton, N. Y.**

THE J. M. NEY COMPANY, makers of NEY'S DENTAL GOLDS,  
are now issuing, FREE, a veritable

## BUDGET OF GOLD KNACKS FOR THE GOLD WORKER

—a very comprehensive, useful little book of things that you once learned and have forgotten; the little knacks taught only by experience and never included in a text-book; an indexed reminder of "just how you did it before"; not a treatise on the easy, obvious things in gold manipulation, but an orderly reminder of the way through the mean little jobs that you run up against.

Here is a word (verbatim) to show that the little book is appreciated:

Oct. 13, 1909.

J. M. NEY Co.,  
Hartford, Conn.

Dear Sirs:—

I received your booklet "Ney's Golds," and I want to tell you that it is an elegant advertisement. I learned from it some points about soldering that I ought to have known; and something about annealing both plate and filling gold.

I had a central porcelain facing to tip yesterday and I tried your "Safe Method" and I find that it is an improvement on the method I *was using*.

So, I was so pleased with the information you so kindly sent me, that I immediately sent in an order for an ounce of solder to Kansas City.

Yours truly,  
W. H. CONNER.

Send for "Ney's Gold Book."

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THE J. M. NEY COMPANY  
HARTFORD, CONN., U. S. A.



# Platinum Gold Arch with Raised Thread

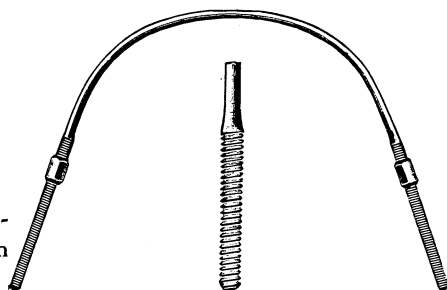
(Patented Nov. 30, 1909.)

STYLE "B"

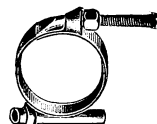
Buccal-tube with  
Adjustable Collar  
(Dr. R.Ottolengui)



Preventing the Tip-  
ping of Anchor Teeth



Clamp Band with  
Adjustable and Tele-  
scoping Buccal-tube  
(Dr. R.Ottolengui)



OUR STYLE "B" EXPANSION ARCHES HAVE the threaded parts of one UNIFORM STANDARD SIZE so as to permit of interchangeability of not only the adjusting nuts, but also the TUBES of clamp bands. The advantage thereby gained must be apparent. Without disturbing the clamp bands, permanently adjusted in the patient's mouth, changes can be made from an 18-gauge arch to any other gauge, either heavier or lighter, as the case may require. Formerly this was only possible by the extra labor of removing clamp bands and soldering other tubes, corresponding in fit to the arch selected.

In addition to the above-mentioned new feature, the arches with the raised thread are considerably stronger without being more bulky, but the mere explaining of the advantages hardly does justice to the improved form and we would deem it a favor if you will permit us to send you a few of the appliances so that you may be better able to judge for yourself. For those who do not wish to purchase platinum-gold appliances, we can furnish samples made of German silver, highly finished and heavily gold-plated.

**JULIUS ADERER, Manufacturer**

**101 West 42d Street, New York**

## Gold

18-kt. Plate or Wire  
20-kt. Plate or Wire  
Clasp Plate or Wire

### **Non-Oxidizable Special Backing**

22-kt. Soft or Medium  
Coin Plate  
22-kt. Shells  
22-kt. Disks

**Special Prepared  
Platinum Gold  
for**

**Orthodontia Appliances**

**Gold and Platinum  
Scraps bought for Cash  
or in exchange**

## Gold Solders

For 22-kt. For 18-kt.  
" Coin " 16-kt.  
" 20-kt. " 14-kt.

### **Silver Solder**

### INLAY GOLD

24-kt. in 2-dwt. Buttons

### 6% Platinum-Gold

### Gold Foil

$\frac{1}{1000}$   $\frac{2}{1000}$   $\frac{3}{1000}$

## Filling Gold

Foil Nos. 4, 5, 6, 30 and 60  
Cylinders Nos.  $\frac{1}{4}$ ,  $\frac{1}{2}$ ,  $\frac{5}{8}$ ,  $\frac{3}{4}$ , 1  
and assorted in  
 $\frac{1}{32}$ ,  $\frac{1}{16}$ ,  $\frac{1}{8}$  or  $\frac{1}{4}$  oz. vials  
Special rates in oz. lots

### PLATINUM

**Foil, extra soft**

$\frac{1}{1000}$   $\frac{1}{2000}$   $\frac{1}{3000}$

**Plat-iridio Wire**

From 3% to 30% Iridium

# JULIUS ADERER

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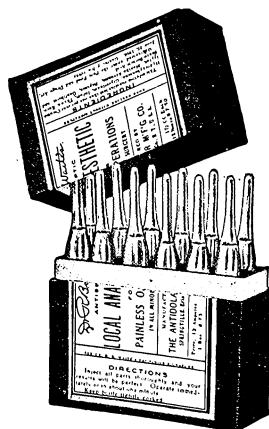


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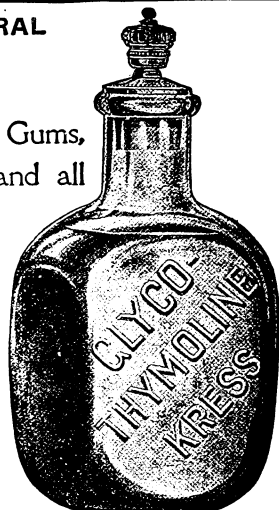
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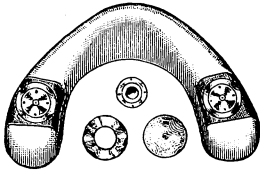
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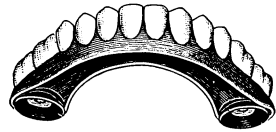


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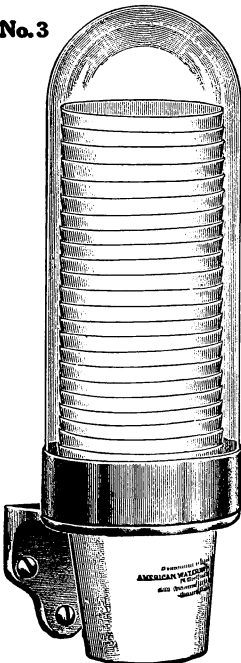
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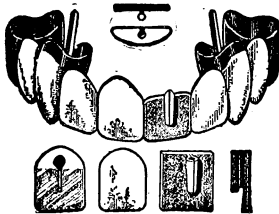
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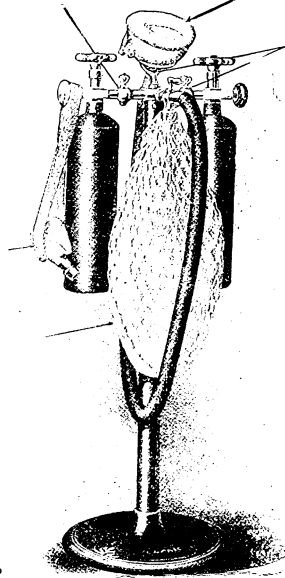
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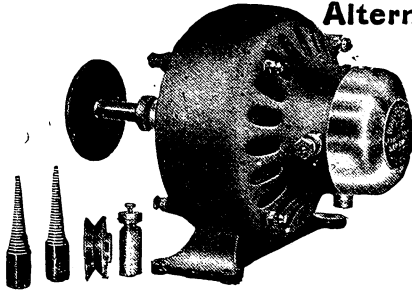
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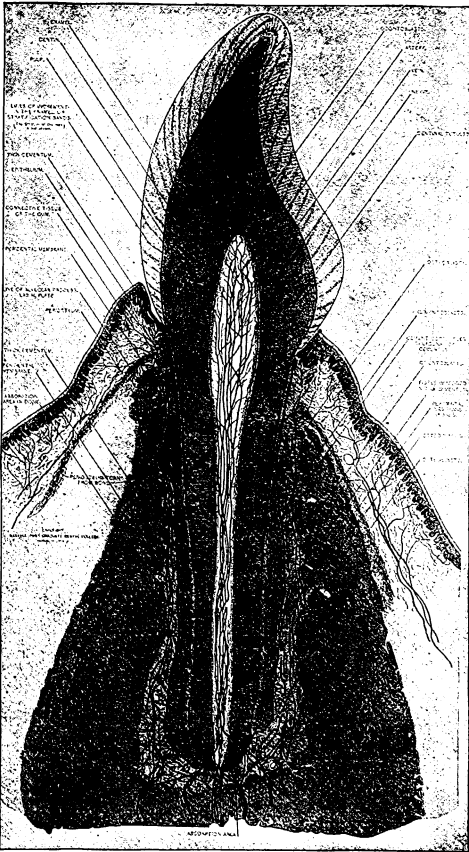


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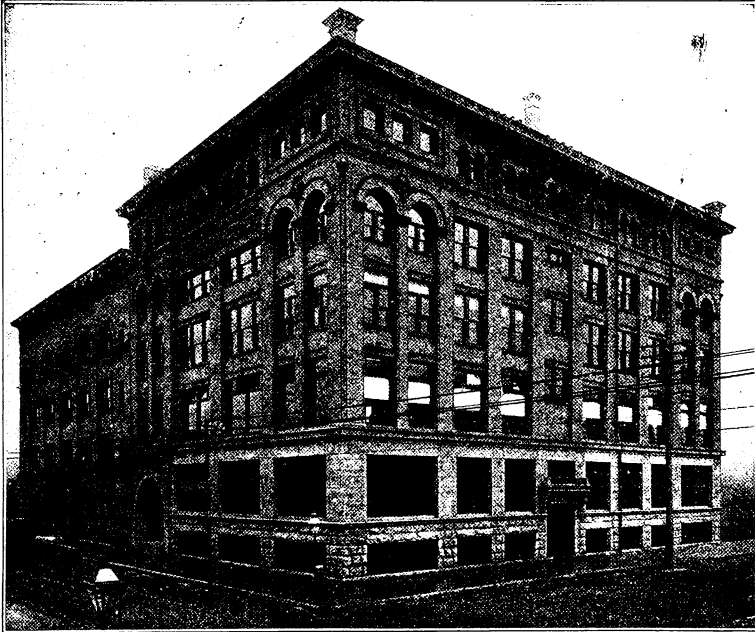
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That **some** were deficient in **all** respects.

That **all**, except Dioxogen, were deficient in **some** respect.

Dioxogen passed without criticism, and it always will, because it is always uniform, always of the same high standard—a standard much higher than the U. S. P. requires.

You are **sure** when you use Dioxogen.

*Write for complimentary sample and literature*

**The Oakland Chemical Co.**  
NEW YORK, N. Y.

